DRAFT

ENVIRONMENTAL IMPACT REPORT

13131 LOS ANGELES STREET INDUSTRIAL PROJECT

Prepared for

City of Irwindale
5050 North Irwindale Avenue
Irwindale, California 91706

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

April 2020

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2861 Pullman Street
Santa Ana, CA 92705

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
µg/m^3	Micrograms per cubic meter
°F	Degrees Fahrenheit
2016 AQMP	2016 Air Quality Management Plan
2016 RTP/SCS	2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy
AAI	All Appropriate Inquiries
AB	Assembly Bill
AC	Acre
ACM	Asbestos-containing materials
ADA	Americans with Disabilities Act
ADT	Average daily traffic
AERMOD	USEPA air toxic dispersion model
AF	Acre feet
AFD	Arcadia Fire Department
amsl	above mean sea level
AP Act	Alquist-Priolo Earthquake Fault Zoning Act
APE	Area of Potential Effects
AQMP	Air Quality Management Plan
ATCM	Airborne toxics control measure
BAT	Best available technologies
BAU	business-as-usual
BLM	Bureau of Land Management
BMPs	Best Management Practices
BP	before present
CA	California
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CADPR	California Department of Parks and Recreation
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
CAL OES	California Office of Emergency Services
CalARP	California Accidental Release and Prevention Program
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CalRecycle	California Department of Resources Recycling Recovery formerly the California Integrated Waste Management Board
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CAT	Climate Action Team
CBC	California Building Code
CBC	County Building Code
CBSC	California Building Standards Code
CC&R	Covenants, Codes, and Restrictions

Acronym	Meaning
CCAA	California Clean Air Act
CCAP	Climate Action Plan 2020
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CF_4	tetrafluoromethane
CFCs	Chlorofluorocarbons
CFGC	California Fish and Game Code
CFR	Code of Federal Regulations
CH_4	Methane
CHP	California Highway Patrol
CHRIS	California Register of Historical Resources
CIWMA	California Integrated Waste Management Act
CIWMP	Countywide Integrated Waste Management Plan
CMP	Congestion Management Program
CMP	Corrugated Metal Pipe
C_{nel}	Community noise equivalent level
CNEL	Community Noise Equivalent Level
CNPSI	California Native Plant Society Inventory
CO	carbon monoxide
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
COHb	carboxyhemoglobin
Cortese List	Hazardous Waste and Substances Site List – Site Cleanup
County	Mendocino County
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resource
CSE	Countywide Siting Element
CSMD	Consolidated Sewer Maintenance District
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVUSD	Covina Valley Unified School District
CWA	Clean Water Act
CWC	California Water Code
cy	Cubic Yards
dB	Decibel
dBA	Decibel A-Weighted
dbh	Diameter at Breast Height
DEIR	Draft Environmental Impact Report

Acronym	Meaning
DIF	Development Impact Fee
Districts	Sanitation Districts of Los Angeles County
DOC	Department of Conservation
DOT	Department of Transportation
DPM	Diesel particulate matter
DPR	Los Angeles County Department of Parks and Recreation
DPW	Department of Public Works
DTSC	California Department of Toxic Substances Control
DUSD	Duarte Unified School District
DWR	Department of Water Resources
EIR	Environmental Impact Report
EMFAC	EMission FACtor model
EO	Executive Order
EPA	Environmental Protection Agency
EPS	Emissions Performance Standard
ESA	Endangered Species Act
ESA	Environmental Site Assessment
EV	Electric vehicle
FAAQS	Federal ambient air quality standards
FAR	floor to area ratio
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FMCSA	Federal Motor Carrier Safety Administration
FTA	Federal Transit Administration
GHG	Greenhouse gas
GLO	General Land Office
GP	General Plan
GWP	global warming potential
H_2O	water
Habitat Authority	Puente Hills Habitat Preservation Authority
HCM	Highway Capacity Manual
HEPA	High-efficiency particulate air
HFCs	hydrofluorocarbons
HMBP	Hazardous Materials Business Plan
HMTA	Hazardous Materials Transportation Act
HRA	Health Risk Assessment
HSWA	Hazardous and Solid Waste Amendments
H.G.L.	Hydraulic Grade Line
I-	Interstate
I-10	Interstate 10
I-210/SR-210	Interstate/State Route 210
I-605	Interstate 605
IBC	International Building Code

Acronym	Meaning
IPCC	Intergovernmental Panel on Climate Change
IPD	Irwindale Police Department
ISO	Independent System Operator
ITE	Institute of Transportation Engineers
JOS	Joint Outfall System
KOA	KOA Corporation
kv	Kilovolt
L_2	Mean noise levels occurring 2 percent of the time
L_{25}	Mean noise levels occurring 25 percent of the time
L_{50}	Mean noise levels occurring 50 percent of the time
L_8	Mean noise levels occurring 8 percent of the time
LARWQCB	Los Angeles Regional Water Quality Control Board
LCFS	Low Carbon Fuel Standard
L_{dn}	Day-Night Average Noise Level
LDR	Land Disposal Restrictions
LED	light emitting diode
L_{eq}	Equivalent sound level for the total energy (average observed for one hour)
LID	Low impact development
L_{max}	Maximum noise level
LOS	level of service
LOS	Level of service
LRA	Local Responsibility Areas
LSTs	Localized significance threshold
M	Magnitude on the Richter Scale
MATES IV	Multiple Air Toxics Exposure Study in the South Coast Air Basin
MBAS	methylene blue activated substances
MBTA	Migratory Bird Treaty Act
MC	Municipal code
MCA	Medieval Climatic Anomaly
Metro	Los Angeles County Metropolitan Transportation Authority
Mg/L	Milligrams per liter
MGD	millions of gallons per day
MLD	Most Likely Descendants
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
MND	Mitigated Negative Declaration
MOU	Memorandum of Understanding
MPE	Maximum Probable Earthquake
MPO	Metropolitan Planning Organization
MRF	Material Recovery Facility
MS4s	Municipal separate storm sewer systems
Msl	Mean sea level
MT	metric tons
MUTCD	Manual on Uniform Traffic Control Devices
MVSD	Mountain View School District

Acronym	Meaning
mw	Megawatt
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NEPA	National Environmental Policy Act
NFA	No Further Action
NHM	Natural History Museum of Los Angeles County
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NO	nitric oxide
NO_2	Nitrogen dioxide
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NOx	Nitric oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSR	New Source Review
NWIC	North Western Information Center
O&M	Operation and maintenance
O_2	Oxygen
O_3	Ozone
OEHHA	California Office of Environmental Health Hazard Assessment's
OEM	Emergency Management
OES	Office of Emergency Services
OHP	Office of Historic Preservation
O-P	Office Professional
OPR	Office of Planning and Research
O-S	Open Space
OSHA	Occupational Safety and Health Administration
OSY	Operating Safe Yield
Pb	lead
PCBs	polychlorinated biphenyls
PCE	Passenger Car Equivalency
PEIR	Program Environmental Impact Report
PFCs	perfluorocarbons
PM	Particulate matter
PM_{10}	particulate matter 10 micrometers in diameter or less
$PM_{2.5}$	particulate matter 2.5 micrometers in diameter or less
POTWs	publicly owned treatment works
ppb	Parts per billion
ppm	Parts per million
PPV	Peak particle velocity
PRC	Public Resources Code
Project	13131 Los Angeles Street Industrial Project

Acronym	Meaning
PV	photovoltaic
RCP	Regional Comprehensive Plan
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
RECLAIM	Regional Clean Air Incentives Market
REL	Reference Exposure Level
Risk Reduction Plan	Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles
RMS	Root mean square
ROG	Reactive organic gas
ROW	right-of-way
RPS	Renewables Portfolio Standard
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
RWQCB	Regional Water Quality Control Board, Los Angeles Region
SAAQS	State ambient air quality standards
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Archaeological Information Center
SCE	Southern California Edison
SCS	sustainable communities strategy
SDWA	Safe Drinking Water Act
SEA	Significant Ecological Area
sf	Square-foot
SF_6	sulfur hexafluoride
SGM	Sustainable Groundwater Management
SGMA	Sustainable Groundwater Management Act
SGVCOG	San Gabriel Valley Council of Governments
SGVWC	San Gabriel Valley Water Company
SIP	State Implementation Plan
SJCWRP	San Jose Creek Water Reclamation Plant
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur dioxide
SO_4	sulfates
SoCAB	South Coast Air Basin
SoCalGas	Southern California Gas Company
SOx	Sulfur oxides
SPCC	Spill Prevention Control and Countermeasures
SR-60	State Route 60
SRA	Source receptor area
SSC	Species of Special Concern
Strategy	Mobile Source Strategy
Summary Plan	Integrated Waste Management Summary Plan
SUSMP	Standard Urban Storm Water Mitigation Plans

Acronym	Meaning
SWAMP	Surface Water Ambient Monitoring Program
SWDA	Safe Drinking Water Act
SWPPP	Stormwater Pollution Prevention Plan
SWQDv	Storm Water Quality Design Volume
SWRCB	State Water Resource Control Board
T/L	Transmission Lines
TAC	Toxic air contaminant
TCR	Tribal Cultural Resources
TDS	Total dissolved solids
TIA	Transportation Impact Analysis
TPH	Total petroleum hydrocarbons
TSCA	Toxic Substances Control Act
U.S.	United States
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geologic Survey
UWMP	Urban Water Management Plan
VCDW	Valley County Water District
VdB	Decibel notation
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	Vehicle miles traveled
VOC	Volatile organic compounds
Vph	vehicles per hour
WDR	Water Discharge Requirements
WMP	Water Master Plan
WQMP	Water Quality Management Plan
WRP	Water reclamation plants

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EXECUTIVE SUMMARY

This section includes a brief summary of the 13131 Los Angeles Street Industrial Project (Project), including setting, background and project objectives; areas of controversy and issues to be resolved; alternatives to the proposed project; and a summary table, which lists the potential impacts identified in the Draft Environmental Impact Report (DEIR) by topic, along with the corresponding mitigation measures and the level of significance after mitigation.

ES.1 Introduction

This DEIR has been prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code §§ 21000-21177) and the Guidelines for the Implementation of CEQA (California Administrative Code §§ 15000 et seq.). As described in CEQA Guidelines Section 15121(a), an EIR is a public informational document that assesses the potentially significant environmental impacts of a project, identifies ways to minimize the significant impacts, and describes a reasonable range of alternatives to the Project. CEQA requires that an EIR be prepared by the agency with primary responsibility over the approval of a project (the lead agency). The City of Irwindale is the lead agency for the Proposed Project.

This DEIR evaluates the potential environmental impacts associated with the implementation of the proposed 13131 Los Angeles Street Industrial Project, which includes the construction and operation of a concrete tilt-up industrial/warehouse building (±528,710 gross square feet) with parking, landscaping, and utilities. The City has determined that an EIR is the appropriate CEQA documentation due to the potential for significant environmental impacts that could result from approval of the requested actions and development of the proposed Project. This DEIR evaluates the existing environmental conditions in the area, analyzes potential environmental impacts due to the implementation of the Project, and identifies feasible mitigation measures that could avoid or reduce the magnitude of those impacts. This DEIR provides an analysis and evaluation of on- and off-site environmental impacts resulting from the construction and operation of the Project.

ES.2 Project Location and Setting

The City of Irwindale encompasses approximately 9.6 square miles and is located within the eastern portion of Los Angeles County at the periphery of the greater Los Angeles metropolitan area. The San Gabriel River delineates the northern boundary of the City with the foothills of the nearby San Gabriel Mountains located further north. The City is centrally located within the San Gabriel Valley and is generally bounded on the north by Duarte, on the east by Azusa, on the south by Baldwin Park, and on the west by the cities of Monrovia, Arcadia, and Duarte. Regional access to the City is provided by the Foothill Freeway (I-210) and the San Gabriel River Freeway (I-605).

The proposed Project is located east of the San Gabriel River and Interstate 605 in the western portion of the City of Irwindale. Surrounding the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the I-605 to the north, an industrial building (SCE Material Supply,

Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south.

ES.3 Project Background

Initial development of the 24.88-acre project site occurred in 1967 when the California Portland Cement Company, a manufacturer of cement, ready mix concrete, building and construction supplies, and concrete products began operations. From 1967 until 2017, there have been several ownership changes, but the industrial operations have remained essentially the same. Previous occupants include Spancrete of California, United Ready-Mix Concrete, Hanson Spancrete Pacific Inc., the Heidelberg Cement Group and Clark Pacific. This use took advantage of nearby sand and gravel quarries for source material and convenient access to the San Gabriel Freeway for heavy duty truck trips.

The property has been unoccupied since 2017. The current Project proponent, Duke Realty, approached the City in 2018 with plans for an approximately 528,710 SF speculative concrete tilt-up building on the site.

ES.4 Description of Proposed Project

The proposed Project involves the demolition of the existing on-site buildings and ancillary structures for the construction of an approximately 528,710 SF (gross) building, with a 520,524 SF ground floor and 8,456 SF mezzanine. The proposed building would be 47.5 feet tall, with architectural features extending up to 53.5 feet tall. The building would feature forklift ramps and roll-up dock doors on the northern and western sides, respectively.

The proposed Project would include 261 standard vehicle parking spaces, 149 trailer stalls, and 13 bicycle parking stalls. A total of four entryways would be provided for access to the site: two driveways on Los Angeles Street, and two gated driveways along Rivergrade Road. The Project would feature 109,330 SF of landscaping including London plane, chitalpa, and date palms trees along Los Angeles Street. Landscaping around the perimeter of the site would include trees, shrubs, accent plants, and groundcover. The landscaping plan shall be submitted to the planning department for approval prior to the issuance of building permits and shall be implemented prior to occupancy.

The site is located in an area designated Industrial/Business Park by the City of Irwindale General Plan, and zoned M-2 Heavy Manufacturing by the City Municipal Code. The Project proposes development of an industrial warehouse that is compatible with surrounding uses. According to the City's 2008 General Plan, this type of development is usually characterized by "intensive industrial operations that may also include outdoor storage of materials and equipment as an ancillary use." Compatibility with surrounding land uses and conformity with the City Commercial and Industrial Design Guidelines would be established through the City's project review and Site Development Permit. While the proposed warehouse use is consistent with the project site's current M-2 Heavy Manufacturing zoning designation, no specific tenant(s) have been identified to occupy the proposed building.

ES.5 Areas of Controversy/Issues to be Resolved by Lead Agency

Section 15123(b)(2) of the CEQA Guidelines requires that areas of controversy known to the lead agency must be stated in the EIR summary. Issues of interest to the public and public agencies were identified during the 30-day public comment period for the Initial Study and Notice of Preparation. Comments received during this scoping period were considered during the preparation of this EIR. Additionally, comment letters received during the scoping period primarily expressed air quality, greenhouse gas, and traffic concerns. These concerns have been identified as areas of known controversy and are analyzed in Chapter 3.0 of this DEIR. The Initial Study, Notice of Preparation, distribution list, and comments received during the scoping period are included in Appendix A of this DEIR.

ES.6 Alternatives to the Proposed Project

The CEQA Guidelines Section 15126.6 requires consideration and discussion of alternatives to the proposed Project in an EIR. One alternative, a new or reestablished concrete manufacturing use, was considered but rejected from further consideration in this EIR. Two alternatives, including the No Project/No Build Alternative, are reviewed in Chapter 5.0 of this document. Chapter 5.0 summarizes alternatives to the proposed Project that were developed, as well as the No Project/No Build Alternative, as required under CEQA. Chapter 5.0 provides a discussion of the alternatives impact analysis considered in the EIR and compares each impact of the areas of potential environmental effects to the proposed Project pursuant to CEQA.

ES.6.1 Alternative 1 – No Project/No Build

Under Alternative 1, the project site demolition of the 20,000 SF brick and concrete office building, a small mobile office, an approximate 2,883 SF office building, and an approximate 9,618 SF maintenance building would still occur, but the site would remain vacant indefinitely. While the project site was previously occupied by a concrete manufacturing business, it was vacated by that business in 2017. And the proposed warehouse, parking lots, and landscaping would not be constructed on the project site.

The No Project/No Build Alternative would result in the avoidance of environmental impacts relative to the proposed Project. Chapter 5.0 provides a summary of the comparison of the environmental effects of the Project to the alternatives presented in this section, including the No Project/No Build Alternative.

ES.6.2 Alternative 2 – Reduced Intensity

The Reduced Intensity Alternative was identified by the Lead Agency to evaluate the comparative environmental impacts associated with construction of a project with less building square footage. Under this Alternative, a smaller warehouse with similar landscaping would be constructed. The Project's 528,710 gross SF building area would be reduced by 15 percent, which yields a warehouse building of approximately 450,000 gross SF as compared to the proposed Project. The building footprint would remain within the footprint of the proposed Project. Access driveways to the site would remain the same.

ES.6.3 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) indicates that an analysis of alternatives to a project shall identify an Environmentally Superior Alternative among the alternatives evaluated in an EIR. The CEQA Guidelines also state that should it be determined that the No Project Alternative is the Environmentally Superior Alternative, the EIR shall identify another Environmentally Superior Alternative among the remaining alternatives.

As demonstrated in Chapter 5.0 of the DEIR, Alternative 1, the No Project (No Project/No Build) Alternative, would be the environmentally superior alternative, as it would result in no new environmental impacts, would avoid several of the proposed project's impacts and would eliminate the significant and unavoidable impacts identified for the proposed project related to air quality, greenhouse gases, and traffic. However, Alternative 1 would not feasibly attain the basic objectives of the Project.

Alternative 2, Reduced Intensity Project (450,000 SF) is, therefore, an environmentally superior alternative to the proposed Project. This alternative would reduce several of the proposed project's impacts and would meet the basic project objectives, although to a lesser degree when compared with the proposed Project.

ES.7 Summary of Impacts and Mitigation Measures

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
3.1 Air Quality			
The Project would conflict with or obstruct implementation of an air quality plan. • The Project would result in NO_x emissions beyond the SCAQMD regional significance threshold during operations, it could potentially delay the timely attainment of air quality standards and/or AQMP emission reduction.	S	**AQ-1:** Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the City of Irwindale Community Development Department Manager. • The proposed warehouse shall be constructed with electrical conduits provided to each dock door in order to accommodate future electric charging for trucks to plug-in should future technology allowing trucks to operate partially on electricity become available. • At least five percent of all vehicle parking spaces shall include rough-in of electrical conduit for future EV charging stations. Further, provisions for electrical hookups to plug in any onboard auxiliary equipment shall be provided for Project trucks at each dock door location. Electrical panels shall be appropriately sized to allow for future expanded use. • The majority of all loading/unloading docks and trailer spaces shall be equipped with electrical hookups for trucks with transport refrigeration units (TRUs) or auxiliary power units (APUs). Rough-in of electrical conduits for future hookups shall meet this requirement until a tenant utilizes trucks with TRUs or APUs. Once any tenant utilizing trucks with TRUs or APUs starts to operate, electrical hookups shall be provided. • Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations. At a minimum each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than five minutes; and 3) telephone numbers of the building facilities	Significant and unavoidable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
		manager and CARB to report violations. • Locate any check-in points for trucks a minimum of 150 feet inside the Project site to reduce potential for trucks queuing outside of the facility. • All dock doors and truck loading spaces shall be located either on the north side or west side of the building in order to encourage truck traffic within the Project site to be located away from the eastern property line (the property line closest to sensitive receptors) to the extent practical. • The Project site is 205 meters (673 feet) from the nearest sensitive receptors at the nearest residences. Establish a buffer zone of at least 300 meters (800 feet) between truck loading zones/docks and the nearest sensitive receptors to the east. • Restrict overnight parking in the residential communities to the east of the Project. Any lease for the site shall not restrict overnight parking within the Project site where trucks can be stored overnight. • All service equipment (i.e., forklifts) used within the site shall be electric or compressed natural gas-powered (propane). • In order to promote alternative fuels, and help support “clean” truck fleets, the developer/successor-in-interest shall provide building occupants with information related to SCAQMD’s Carl Moyer Program, or other such programs that promote truck retrofits or “clean” vehicles and information including, but not limited to, the health effect of diesel particulates, benefits of reduced idling time, CARB regulations, and importance of not parking in residential areas. Tenants shall be notified about the availability of: 1) alternatively fueled cargo handling equipment; 2) grant programs for diesel-fueled vehicle engine retrofit and/or replacement; 3) designated truck parking locations in the project vicinity; 4) access to alternative fueling stations proximate to the site that supply compressed natural gas; and 5) the United States Environmental Protection Agency’s SmartWay program. • There shall be provisions for preferential parking for carpoolers and vanpools.	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
The Project would result in a cumulatively considerable net increase of a criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. • The proposed Project would result in emissions exceeding the SCAQMD regional NOx threshold during operations. Therefore, the Proposed Project would have the potential to cause or affect a violation of the ambient air quality standards. • The Proposed Project has the potential to result in a cumulatively considerable net increase of a criteria pollutant (NOx) for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.	S	Refer to mitigation measure **AQ-1** above.	Significant and unavoidable.
The Project would not expose sensitive receptors to substantial pollutant concentrations.	LTS	No mitigation measures required.	LTS
The Project would not result in other emissions adversely affecting a substantial number of people.	NI	No mitigation measures required.	NI
3.2 Cultural Resources			
The Project would not cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5.	NI	No mitigation measures required.	NI
The Project could cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5.	PS	**CUL-1:** Prior to issuance of grading permits, the Applicant shall retain a qualified archaeological monitor and, if interested pending conclusion of the tribal resources consultation, a Native American monitor. Monitoring by a qualified archaeologist should be conducted under the supervision of a Los Angeles County Certified archaeologist and, if interested, by a Native American monitor from one of the Gabrieleño groups recognized by the Native American Heritage Commission (NAHC). The monitor shall be present on the Project site during ground-disturbing activities to monitor rough and	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
		finish grading, excavation, and other ground-disturbing activities in any native soils (i.e. non-previously engineered soils). Because no cultural resources were identified on the Project site, archaeological monitors are not required to be present on a full-time basis but shall spot check ground-disturbing activities to ensure that no cultural resources are impacted during construction activities. The precise timing of monitoring activities shall be consistent with the provisions established in the Monitoring Plan. The Monitoring Plan shall be prepared by a qualified archaeologist and shall be reviewed by the Community Development Manager/City Planner, or designee. The Monitoring Plan should include at a minimum: (1) a list of personnel involved in the monitoring activities; (2) a description of how the monitoring shall occur; (3) a description of the frequency of monitoring (e.g., full-time, part-time, spot checking); (4) a description of what resources may be encountered; (5) a description of circumstances that would result in the halting of work at the project site (e.g., what is considered a "significant" archaeological site); (6) a description of procedures for halting work on site and notification procedures; and (7) a description of monitoring reporting procedures. If any significant historical resources, archaeological resources, tribal cultural resources, or human remains are found during monitoring, work shall be stopped within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist. If the deposits are culturally significant, adverse effects on the deposits must be avoided, or such effects must be mitigated. Mitigation can include, but is not necessarily limited to: leaving the deposits in place, excavation of the deposit in accordance with a data recovery plan (see CCR Title 4(3) Section 5126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; production of a report detailing the methods, findings, and significance of the archaeological site and associated materials; curation of archaeological materials at an appropriate facility for future research and/or display; and an interpretive display of recovered archaeological materials at a local school, museum, or library.	

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
		Upon completion of all monitoring/mitigation activities, the consulting archaeologist shall submit a monitoring report to the Community Development Manager/City Planner, or designee, and to the South-Central Coastal Information Center summarizing all monitoring/mitigation activities and confirming that all recommended mitigation measures have been met.	
The Project could disturb human remains, including those interred outside of formal cemeteries.	PS	**CUL-2:** If human remains of any kind are found during construction, the requirements of CEQA Guidelines Section 15064.5(e) and Assembly Bill 2641 shall be followed. According to these requirements, all construction activities must cease immediately, and the Los Angeles County Coroner and a qualified archaeologist must be notified. The Coroner will examine the remains and determine the next appropriate action based on his or her findings. If the coroner determines the remains to be of Native American origin, he or she will notify the NAHC. The NAHC will then identify the MLD to be consulted regarding treatment and/or reburial of the remains. If an MLD cannot be identified, or the MLD fails to make a recommendation regarding the treatment of the remains within 48 hours after gaining access to them, the Native American human remains and associated grave goods shall be buried with appropriate dignity on the property in a location not subject to further subsurface disturbance.	LTS
3.3 Energy			
The Project would not result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.	LTS	No mitigation measures required.	LTS
The Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.	LTS	No mitigation measures required.	LTS
3.4 Greenhouse Gas Emissions			
The Project would generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.	S	**GHG-1**: Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or	Significant and unavoidable.

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
		other means acceptable to the City of Irwindale Community Development Department Manager. • Install solar energy arrays on the building roof and/or on the Project site to generate solar energy for the facility sufficient to meet 20% of the anticipated power usage of a typical shell warehouse facility with ancillary office. • Employ the use of light-colored (Portland cement concrete) paving and roofing materials. • Utilize only Energy Star heating, cooling, and lighting devices and appliances. • Employ the use of electric or alternatively-fueled sweeper with HEPA filters.	
The Project would not conflict any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	NI	No mitigation measures required.	NI
3.5 Hazards and Hazardous Materials			
The Project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	PS	**HAZ-1:** If applicable, the Project applicant shall prepare and implement a Hazardous Materials Business Plan (HMBP) in accordance with the requirements of the Los Angeles County Fire Department Health Hazardous Materials Management Division, which is the Certified Unified Program Agency (CUPA) for Los Angeles County. The HMBP shall include a hazardous material inventory, emergency response procedures, training program information, and basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of at the proposed Project site, and procedures for handling and disposing of unanticipated hazardous materials encountered during construction. The HMBP shall include an inventory of the hazardous waste generated on site and would specify procedures for proper disposal. Any accidental release of small quantities of hazardous materials shall be promptly contained and abated in accordance with applicable regulatory requirements and reported to the County Health Hazardous Materials Division. Implementation of the	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
		HMBP for the Project would ensure that minor spills or releases of hazardous materials would not pose a significant risk to the public or the environment.	
The Project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	PS	Refer to mitigation measure **HAZ-1** above.	LTS
The Project would not emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.	LTS	No mitigation measures required.	LTS
The Project would not be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment.	NI	No mitigation measures required.	NI
The Project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.	LTS	No mitigation measures required.	LTS
3.6 Hydrology and Water Quality			
The Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.	LTS	No mitigation measures required.	LTS
The Project would not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.	LTS	No mitigation measures required.	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
The Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would: a. result in substantial erosion or siltation on- or off-site; b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site; c. create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; d. impede or redirect flood flows.	LTS	No mitigation measures required.	LTS
The Project would not risk release of pollutants due to project inundation in flood hazard, tsunami, or seiche zones.	LTS	No mitigation measures required.	LTS
The Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	LTS	No mitigation measures required.	LTS
3.7 Land Use and Planning			
The Project would not physically divide an established community.	NI	No mitigation measures required.	NI
The Project would not cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.	LTS	No mitigation measures required.	LTS
3.8 Noise			
The Project would not generate a substantial temporary or permanent increase in ambient noise	LTS	No mitigation measures required.	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.			
The Project would not generate excessive groundborne vibration or groundborne noise levels.	LTS	No mitigation measures required.	LTS
The Project is not located within two miles of a private airstrip or airport and would not result in a safety hazard to people residing or working in the project area.	NI	No mitigation measures required.	NI
3.9 Transportation			
	Transit System – NI	No mitigation measures required.	NI
	Bicycle and Pedestrian Facilities - NI	No mitigation measures required.	NI
	Roadway System - PS	**TRANS-1:** A Construction Traffic Management Plan and Truck Haul Route Program shall be prepared for City Traffic Engineer or designee approval to address how the Project will minimize congestion on streets and freeways during the construction period. The Plan/Program will be made available for review by Caltrans.	LTS
		TRANS-2: The Project shall provide a T-Intersection traffic signal at the main Project driveway on Los Angeles Street. The City Engineer shall make the final determination as to need and timing of the traffic signal based on traffic signal warrants.	LTS
		TRANS-3: Project access and internal circulation shall be designed to assure that all tenants of the Project have access to at least one Project driveway at Los Angeles Street and Rivergrade Road for ingress and egress.	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
The Project could conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. • The Project would create significant traffic impacts at two study intersections under future with-Project conditions. • I-605 Southbound Ramps/Los Angeles Street • I-605 Northbound Ramps/Los Angeles Street • The Project would contribute to cumulatively significant ramp queue impacts at the I-605 southbound off-ramp at Lower Azusa Road. • The Project would contribute to cumulatively significant impacts at mainline freeway segments		**TRANS-4:** Prior to the issuance of building permits, the project applicant shall pay the Project's fair share amount for improvements at two study intersections under future with-Project conditions: • I-605 Southbound Ramps/Los Angeles Street • I-605 Northbound Ramps/Los Angeles Street Improvements will include the addition of lanes to the freeway off-ramps at both locations and will require widening of the off-ramp facilities. At the southbound off-ramp location, the recommended mitigation measure is an added left-turn lane at the ramp approach. At the northbound off-ramp location, the recommended mitigation measure is an added right-turn lane at the ramp approach.	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
Cumulative Level Impact	S	The Project would contribute to significant cumulative impacts at six freeway mainline segments and three diverging/merging areas, per Caltrans traffic impact study guidelines and deficient LOS values. It is not within the jurisdictional authority of purview of the Lead Agency or Applicant to adopt, implement, or enforce mitigation measures requiring the construction of improvements by Caltrans, or upon facilities within Caltrans jurisdiction. As such, there are no feasible mitigation measures that will reduce cumulative mainline freeway impacts below significance thresholds. Traditional funding mechanisms used to improve mainline freeway impacts include Los Angeles County's Measure M revenue for transportation, state and federal gas tax, and formula distributions from vehicle registration fees. Future employees/patrons of the Project contribute indirectly to freeway improvements through these sources. However, the Project's contribution to cumulative-level impacts associated with mainline freeway impacts at six is considered significant and unavoidable. No mitigation measures are available.	Significant and unavoidable (mainline freeway segments and merging/diverging areas)
The Project would not conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b).	NI	No mitigation measures required.	NI
The Project would not substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment.	NI	No mitigation measures required.	NI
3.10 Tribal Cultural Resources			
The Project could cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: • Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as	PS	Refer to mitigation measures **CUL-1** and **CUL-2** above.	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
defined in Public Resources Code Section 5020.1(k), or • A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.			
3.11 Utilities and Service Systems			
The Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm drainage electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects.	LTS	No mitigation measures required.	LTS
The Project would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years.	LTS	No mitigation measures required.	LTS
The Project would not result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments.	LTS	No mitigation measures required.	LTS
The Project would not generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals.	LTS	No mitigation measures required.	LTS

Table ES-1. Summary of Environmental Impacts and Mitigation Measures

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
The Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste.	LTS	No mitigation measures required.	LTS

Note: The second column of the table indicates the level of significance prior to mitigation. An impact denoted with an (S) is significant; (PS) potentially significant; (LTS) less than significant; and (NI) no impact.

Table ES-2. Other Environmental Effects Found Not to be Significant (Appendix A - Initial Study)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
Aesthetics The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage. There are no public, state scenic highways, or scenic vistas within the vicinity of the Project site. A lighting plan will be submitted to the City and the building design will fully comply with the City of Irwindale Commercial and Industrial Design Guidelines.	LTS	No mitigation measures required.	LTS
Agriculture and Forestry Resources The Proposed Project site is zoned as M-2 Heavy Manufacturing by the City and is designated in the General Plan as Industrial/Business Park. It is not zoned for agricultural use, nor is it under a Williamson Act contract.	NI	No mitigation measures required.	NI
Biological Resources The site is currently developed and does not contain habitat for sensitive biological resources, wetlands, or waters of the US. The Project would not conflict with any habitat conservation plans.	LTS	No mitigation measures required.	LTS

Table ES-2. Other Environmental Effects Found Not to be Significant (Appendix A - Initial Study)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
Geology and Soils The proposed development is not at risk for landslides, liquefaction, soil erosion, settlement and/or slippage. The site is not located within an Alquist-Priolo Earthquake Fault Zone. The Project is not anticipated to impact paleontological resources.	LTS	No mitigation measures required.	LTS
Mineral Resources The Project site has no known mineral resources of value to the region and residents of the City. There is no loss of availability of any locally important mineral resource because the site is not designated as a mineral resource area.	NI	No mitigation measures required.	NI
Population and Housing The Project would not result in growth that was not already anticipated by the City of Irwindale General Plan. The Proposed Project would not substantially displace existing housing and would not require additional housing construction.	LTS	No mitigation measures required.	LTS
Public Services It is anticipated the Proposed Project would be adequately served by the City's public services during the construction and operational phases. The Project is not expected to generate significant need for additional fire and police protection, nor additional schools, parks, or other public facilities.	LTS	No mitigation measures required.	LTS
Recreation The Project would not increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.	NI	No mitigation measures required.	NI
Wildfire The Project is not located within or near a very high fire hazard severity zone. The site is located within a heavily	NI	No mitigation measures required.	NI

Table ES-2. Other Environmental Effects Found Not to be Significant (Appendix A - Initial Study)

Potential Environmental Impacts	Significance Determination	Mitigation Measures	Level of Significance After Mitigation
industrialized area and is not in the immediate vicinity of any natural or wildlife areas. Access to the Proposed Project is planned at multiple driveway locations on Los Angeles Street and at Rivergrade Road, thereby facilitating emergency response and evacuation, if necessary.			

Note: The second column of the table indicates the level of significance prior to mitigation. An impact denoted with an (S) is significant; (PS) potentially significant; (LTS) less than significant; and (NI) no impact.

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1.0 INTRODUCTION

This Draft Environmental Impact Report (DEIR) evaluates the potential environmental impacts associated with the implementation of the proposed 13131 Los Angeles Street Industrial Project (Project), which includes the construction and operation of a concrete tilt-up industrial/warehouse building (±528,710 gross square feet) with parking, landscaping, and utilities.

1.1 Purpose and Use of the EIR

This DEIR was prepared in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code §§ 21000-21177) and the Guidelines for the Implementation of CEQA (California Administrative Code §§ 15000 et seq.). As described in CEQA Guidelines Section 15121(a), an EIR is a public informational document that assesses the potentially significant environmental impacts of a project, identifies ways to minimize the significant impacts, and describes a reasonable range of alternatives to the project. CEQA requires that an EIR be prepared by the agency with primary responsibility over the approval of a project (the lead agency).

The City of Irwindale is the lead agency for the Proposed Project. Public agencies are charged with the duty to consider and minimize environmental impacts of proposed development, where feasible, and are obligated to balance a variety of public objectives including economic, environmental, and social factors in their decision-making. The City has determined that an EIR is the appropriate CEQA documentation due to the potential for significant environmental impacts that could result from approval of the requested actions and development of the Proposed Project. This Draft EIR evaluates the existing environmental conditions in the area, analyzes potential environmental impacts due to the implementation of the Project, and identifies feasible mitigation measures that could avoid or reduce the magnitude of those impacts. This EIR provides an analysis and evaluation of on- and off-site environmental impacts resulting from the construction and operation of the Project.

1.2 Responsible and Trustee Agencies

For the purpose of CEQA, the term *responsible agency* includes public agencies other than the lead agency that may have discretionary approval or permit authority associated with the Project. The term *trustee agency* means a state agency having jurisdiction by law over natural resources affected by a project which are held in trust for the people of California. Interested agencies may have a general interest in the proposal with respect to issues germane to their organization. Responsible, trustee, or interested agencies with direct or indirect interest in the project include, but may not be limited to the following:

- California Department of Conservation
- California Department of Transportation, District 7
- Native American Heritage Commission
- Los Angeles Regional Water Quality Control Board, Region 4
- South Coast Air Quality Management District
- State Water Resources Control Board

This EIR may also be used by other public agencies to issue approvals and permits related to the Project.

1.3 Type of Document

CEQA) and the CEQA Guidelines identify several types of EIRs, each applicable to different project circumstances. This EIR is for a specific development project with defined parameters. As such, this EIR is a "project" EIR. Project EIRs are defined by CEQA Guidelines (Section 15161) as:

> "The most common type of EIR examines the environmental impacts of a specific development project. This type of EIR should focus primarily on the changes in the environment that would result from the development project. The EIR shall examine all phases of the project including planning, construction, and operation."

1.4 Intended Uses of the EIR

This Draft EIR is intended to evaluate the environmental impacts of the 13131 Los Angeles Street Project. This EIR in its final form will be used by the City of Irwindale in considering approval of the proposed project. In accordance with CEQA Guidelines Section 15126, the EIR will be used as the primary environmental document in consideration of any subsequent planning and permitting actions associated with the Project, to the extent such actions require CEQA compliance, and as otherwise permitted under applicable law.

1.5 Organization of the Draft EIR

The EIR is organized as follows:

The **Executive Summary** provides summary information on the Project location and setting, characteristics areas of controversy and issues to be resolved, project alternatives, and summary of impacts and mitigation measures.

Chapter 1.0 Introduction. This chapter provides general background on the Project; identifies the purpose and need for action including the project objectives; describes the roles of the City of Irwindale and other agencies having discretionary approval, and authorities regulating various aspects of the Project; and summarizes the public involvement process for the Project.

Chapter 2.0 Project Description. This chapter describes the Project location and setting, background, purpose and objectives, characteristics, design features, timing and other topics.

Chapter 3.0 Environmental Impact Analysis. This chapter describes the regulatory setting, environment setting (existing conditions), and impact analysis approach for each environmental resource or topic. Each topical section also contains analysis and assessment of impacts (direct, indirect, and cumulative) of the proposed Project. Other known or potentially related area projects are identified for purposes of analysis of cumulative impacts at the outset of this chapter.

Chapter 4.0 Other Environmental Considerations. This chapter describes other aspects of compliance with CEQA procedures, including a description of significant and unavoidable adverse impacts, effects found not to be significant, any significant irreversible environmental changes, and discussion of potential growth-inducing impacts.

Chapter 5.0 Alternatives. This section identifies any alternatives that were considered but not analyzed in detail. This chapter presents a comparison of alternatives including the proposed Project, and identifies an the Environmentally Superior Alternative pursuant to CEQA requirements (CEQA 15126.6(e)(2)).

Chapter 6.0 List of Preparers and Persons Consulted. This chapter provides a list of preparers, including City of Irwindale and consultants. This chapter also identifies the persons, groups, agencies and other governmental bodies that were consulted or that contributed to the preparation of the EIR and lists agencies, organizations, and persons to whom the EIR will be sent or has been sent.

Chapter 7.0 References. This chapter provides the references used in preparing the EIR.

Appendices contain information that supplements or supports the analyses in the body of the EIR.

1.6 Environmental Review Process

The review and certification process for the EIR will involve the following general procedural steps:

1.6.1 Notice of Preparation

In accordance with CEQA Guidelines Section 15082, the City prepared a Notice of Preparation (NOP) of an EIR for the Project that was distributed to responsible agencies and the public for a 30-day comment period, beginning on August 14, 2019, and concluding on September 13, 2019. A public scoping meeting was held on August 26, 2019 at the Irwindale Community Center in order to receive comments and input from the public as to the scope and content of the EIR. City of Irwindale staff, the City's environmental consultant, and Project applicant attended the meeting. A total of four (4) members of the public attended. During the NOP review period the City received five (5) agency comment letters. Public and agency comments were considered during preparation of the EIR. The NOP and comments received from interested parties and agencies are presented in Appendix A**.** Written comments from agencies are summarized below.:

Interested Party/Agency	Date	Summary of Comment(s)
Caltrans	09/11/2019	• Include a Traffic Impact Analysis (TIA) that analyzes the Project's impact on the State Highway System and added traffic volumes to on/off-ramps. • Highway Capacity Manual (HCM) methodology should be used when assessing Project impacts on the State Highway System. • A Construction Traffic Management Plan and Truck Haul Route Program should be included. • The City should develop a verifiable performance-based Vehicle Miles Travelled (VMT) criteria.

Interested Party/Agency	Date	Summary of Comment(s)
California Air Resources Board (CARB)	09/12/2019	• Concern with air pollution and health risk impacts on neighboring communities and schools. • The Project should not adversely impact neighboring disadvantaged communities. • The air quality analysis of the DEIR and associated health risk assessment (HRA) should include a conservative percentage of trucks with transportation refrigeration units. • Address the potential for health risks for existing residences near the Project site during construction. Evaluate existing baseline, future baseline, and future year with Project scenarios. • Project final design should consider zero-emissions technologies.
Native American Heritage Commission (NAHC)	09/10/2019	• Consult with California Native Americans that are traditionally and culturally affiliated with the geographic area of the proposed Project. • Recommends an archaeological records search with the appropriate California Historical Resources Information System (CHRIS) Center. • Recommends contacting the NAHC for a Sacred Lands File search and list of appropriate tribes for consultation. • The mitigation and monitoring reporting program should include provisions for identification, evaluation, treatment, and disposition of archaeological or tribal cultural resources.
Sanitation Districts of Los Angeles County (LACSD)	09/11/2019	• Advises the developer of Districts intent to provide wastewater service up to legally permittable levels and informs the developer of the currently existing capacity. • Project developers would be required to pay a Connection Fee and may need to obtain a permit for Industrial Wastewater Discharge.
South Coast Air Quality Management District (SCAQMD)	09/10/2019	• Requests the Lead Agency quantify criteria pollutant emissions and compare the results to SCAQMD's CEQA regional pollutant emissions significance thresholds to determine air quality impacts. • Identify any potential adverse air quality impacts that could occur from all phases of the Project and all air pollutant sources related to the Project. • Perform a mobile source HRA. • Cumulative impacts from warehouse projects in communities with existing industrial sources should be addressed.

1.6.2 Draft EIR

This Draft EIR contains a description of the project, description of the environmental setting, identification of project impacts, and feasible mitigation measures for impacts found to be significant, as well as an analysis of project alternatives. Upon completion of the Draft EIR, the Notice of Completion (NOC) will be filed with the California Office of Planning and Research to begin the 45-day public review period (Public Resources Code Section 21161).

1.6.3 Public Notice/Public Review

Concurrent with the NOC, the County will provide public notice of the availability of the Draft EIR for public review and invite comment from the general public, agencies, organizations, and other interested parties. The public review and comment period is 45 days. Notice of the time and location of any public meetings and hearings will be published prior to the meeting/hearing in accordance with applicable law.

All comments or questions regarding the Draft EIR should be addressed to the City contact identified in Section 1.7 that follows.

1.6.4 Response to Comments/Final EIR

Following the public review period, a Final EIR (FEIR) will be prepared. The FEIR will respond to all comments received during the public review period that raise significant environmental concerns and may contain revisions to the Draft EIR, if necessary. The Draft EIR, as revised and combined with responses to comments, will constitute the Final EIR.

1.6.5 Certification of the EIR/Project Consideration

The City of Irwindale Planning Commission will review and make recommendation to the City Council regarding certification of the EIR and action on the proposed project. If the City finds that the FEIR is "adequate and complete," the County may certify the FEIR. Upon review and consideration of the FEIR, the City may take action to approve, revise, or reject the proposed project. Any decision to approve the project would be accompanied by written findings in accordance with CEQA Guidelines Section 15091 and Section 15093. A Mitigation Monitoring and Reporting Program (MMRP), as described below, must also be adopted for mitigation measures that have been incorporated into or imposed on the project to reduce or avoid significant effects on the environment. The MMRP will be designed to ensure that these measures are enforceable and carried out during project implementation.

1.6.6 Mitigation Monitoring and Reporting Program

CEQA Section 21081.6(a) requires lead agencies to adopt an MMRP to describe measures that will be adopted and made a condition of project approval in order to mitigate or avoid significant effects on the environment. The specific reporting or monitoring program required by CEQA is not required to be included in the EIR; however, it must be presented to the Board of Supervisors for adoption.

Throughout the EIR, mitigation measures have been clearly identified and presented in language that will facilitate implementation of the MMRP. Any mitigation measures adopted by the City as conditions for approval of the project will be included in an MMRP to ensure enforceability and verify compliance.

1.7 Contact Persons and Phone Numbers

Lead Agency Name and Address:	City of Irwindale, 5050 North Irwindale Avenue Irwindale, CA 91706
Contact Person and Phone Number:	Marilyn Simpson, Community Development Manager/City Planner (626) 430-2209

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2.0 PROJECT DESCRIPTION

2.1 Project Overview

This Draft Environmental Impact Report (EIR) has been prepared to evaluate and inform the general public about the potential environmental effects that may result from the proposed 13131 Los Angeles Street Industrial Project (Project) in the City of Irwindale. The Project involves the demolition of the existing on-site buildings and structures and the construction of a stand-alone concrete tilt-up building located at 13131 Los Angeles Street (APN: 8353-020-007). The 24.88-acre property is currently occupied by three office buildings totaling 32,501 square feet (SF). The land is zoned M-2 (Heavy Manufacturing), designated "Industrial/Business Park" by the City's General Plan, and subject to the Irwindale Commercial & Industrial Design Guidelines.

The proposed stand-alone concrete tilt-up building (±528,710 SF) would be 47.5 feet tall, with architectural features extending up to 53.5 feet tall. The building would feature forklift ramps and roll-up dock doors on the northern and western sides, respectively. The proposed Project would include 80 trailer parking spaces on the southeast corner of the site, 70 trailer parking spaces along the western end of the site, and 261 standard vehicle parking spaces around the perimeter of the building. On-site utility extensions and landscaping would be provided.

The Project Proponent is pursuing the Project on a speculative basis, meaning that the proposed building's future tenants are not yet identified. Project construction is anticipated to begin in Spring/Summer 2020 if approved.

2.2 Project Location and Setting

The City of Irwindale contains approximately 9.6 square miles and is located within the eastern portion of Los Angeles County at the periphery of the greater Los Angeles metropolitan area. The San Gabriel River delineates the northern boundary of the City with the foothills of the nearby San Gabriel Mountains located further north. The City is centrally located within the San Gabriel Valley and is generally bounded on the north by Duarte, on the east by Azusa, on the south by Baldwin Park, and on the west by the cities of Monrovia, Arcadia, and Duarte. Regional access to the City is provided by the Foothill Freeway (I-210) and the San Gabriel River Freeway (I-605).

The majority of the City's population and development is located in that portion of the City that is east of the San Gabriel River. The City has over 800 businesses, a resident population of just over 1,400, and a daytime population of over 30,000 workers and patrons (City of Irwindale 2008). Of the City's 9.6 square-mile land area, Irwindale has less land devoted to typical urban land uses (residential, commercial, and industrial development) when compared to its neighboring communities. Land uses found in the western portion of the City are dominated by large-scale quarry operations with limited areas of more traditional urban development. Much of the City's land is encompassed by the Santa Fe Dam recreational area and other flood control improvements, and an almost equal proportion is devoted to sand and gravel extraction operations. Contributing to Irwindale's image as an industrial community is the presence of large-scale mining operations and large number of open yard businesses found in the City. The majority

of the developable land in the City is zoned M-2, including many of the City's quarry sites and landfills which date back around 100 years.[1]

The proposed Project is located east of the San Gabriel River and Interstate 605 in the western portion of the City of Irwindale (Figure 2.0-1. Regional Project Location). Surrounding the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south (Figure 2.0-2. Project Location).

2.3 Project Background

Initial development of the 24.88-acre project site occurred in 1967 when the California Portland Cement Company, a manufacturer of cement, ready mix concrete, building and construction supplies, and concrete products began operations. From 1967 until 2017, there have been several ownership changes, but the industrial operations have remained essentially the same. Previous occupants include Spancrete of California, United Ready-Mix Concrete, Hanson Spancrete Pacific Inc., the Heidelberg Cement Group and Clark Pacific. This use took advantage of nearby sand and gravel quarries for source material and convenient access to the San Gabriel Freeway (I-605) for heavy duty truck trips.

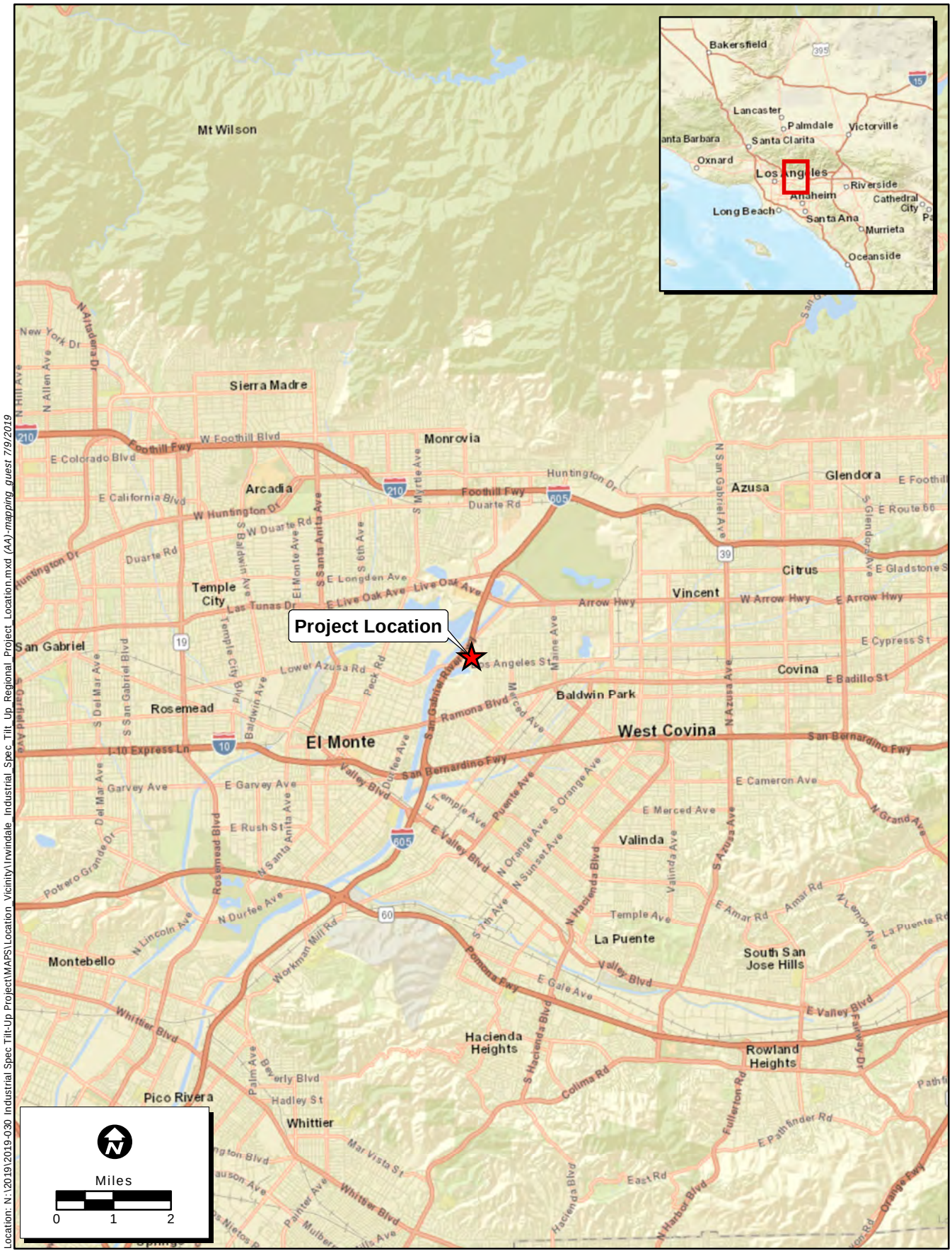
The property has been unoccupied since 2017. The current Project proponent, Duke Realty, approached the City in 2018 with plans for an approximately 528,710 SF speculative concrete tilt-up building on the site.

2.4 Existing and Future Land Use

The Project site is currently occupied by three office buildings totaling 32,501 square feet. The site has largely been cleared of facilities associated with this former use, with the exception of an approximate 20,000 SF brick and concrete office building with a flat roof and steel-framed windows and doors at the south end of the Property; a small mobile office is attached at the northeast corner of the building; an approximate 2,883 SF office building; and an approximate 9,618 SF maintenance building are present to the east of the main building. The Project applicant plans to move forward with demolition of these remaining buildings ahead of Project construction.

The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage. Surrounding the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south.

[1] Pursuant to Article XIII of the Charter of the City of Irwindale, *Mitigation on Negative Environmental Impacts of Mining Operations,* and in recognition of the adverse effects of such large-scale operations on City residents, the City has established a program of appropriating funds for medical benefits available to residents that include a Resident Prescription and Vision Care Program.



Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Location_Vicinity\Irwindale_Industrial_Spec_Tilt_Up_Regional_Project_Location.mxd (AA)-mapping_guest 7/9/2019

Map Date: 7/9/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

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Figure 2.0-1. Regional Project Location

2019-030 Irwindale Industrial Spec Tilt-Up Project

Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Location_Vicinity\Irwindale_Industrial_Spec_Tilt_Up_Project_Location.mxd *0-mapping_guest 7/9/2019*

Map Date: 7/9/2019
Base Source: NAIP 2018

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ENVIRONMENTAL CONSULTANTS

Figure 2.0-2. Project Location

2019-030 Irwindale Industrial Spec Tilt-Up Project

The proposed Project would construct an industrial warehouse building, within an existing and established industrial/business park area. The new building is estimated to be up to 53.5 feet tall, accommodating approximately 528,170 square feet of industrial warehousing space. As the future tenant(s) of the building are not known, the projected number of employees/occupants of the Project cannot be precisely determined. If occupied by multiple light industrial uses for example, the number of employees would likely exceed that of a typical single tenant warehouse user. Accordingly, a highly conservative occupancy ratio of 1 employee/500 square feet, more typical of a light industrial use would yield up to 1,058 employees at the site (Source: RGA. A2-1 Overall Floor Plan).

As described throughout this EIR, the proposed industrial/warehouse use is consistent with the City's industrial/business park land use designation for the project site. The proposed Project site is located in an area designated Industrial/Business Park and zoned M-2 Heavy Manufacturing by the City of Irwindale General Plan (2008). According to the General Plan, typical land uses and/or developments that occur within areas designated as Industrial/Business Park consist of light industry, heavy industry, and distribution. This type of development is "usually well landscaped, provides abundant parking, and a uniform architectural design theme. These attractive developments typically include office, manufacturing, and warehousing uses" (City of Irwindale 2008). The proposed Project would demolish several existing buildings and ancillary structures associated with a former concrete manufacturing business and construct a light industrial/warehouse building and associated parking, utilities, and landscaping. As such, the proposed warehouse building is consistent with the existing pattern of industrial land uses in the surrounding area.

2.5 Project Purpose and Objectives

The objectives of the 13131 Los Angeles Street Industrial Project are to:

- Locate an industrial/warehouse building on a site that is accessible to regional markets and consistent with the existing General Plan and zoning.
- Develop an industrial/warehouse project that is compatible with surrounding uses and conforms with established City Commercial and Industrial Design Guidelines.
- Provide additional employment opportunities on the project site.

2.6 Project Characteristics

The proposed Project involves the demolition of the existing on-site buildings and ancillary structures for the construction of an approximately 528,710 SF (gross) building, with a 520,524 SF ground floor and 8,456 SF mezzanine (Figure 2.0-3. Site Plan). The proposed building would be 47.5 feet tall, with architectural features extending up to 53.5 feet tall. The building would feature forklift ramps and roll-up dock doors on the northern and western sides, respectively.

Parking

The proposed site would include 261 standard vehicle parking spaces, 149 trailer stalls, and 13 bicycle parking stalls. A total of four entryways would be provided for access to the site: two driveways on Los

Angeles Street, and two gated driveways along Rivergrade Road (Figure 2.0-3. Site Plan). The project would feature 12' wide x 15' high level vertical lift truck doors (2 north, 2 west), 9' wide x 10' high vertical lift truck doors (14 north, 33 west), and 3' wide x 7'high metal man doors (3 north, 9 west, 2 east, 12 south) (Figure 2.0-4. Building Elevations).

Landscaping

The Project would feature 109,330 SF of landscaping including London plane, chitalpa, and date palms trees along Los Angeles Street. Landscaping around the perimeter of the site would include trees, shrubs, accent plants, and groundcover. All landscape shall be bound by a 6" high concrete curb. The landscaping plan shall be submitted to the planning department for approval prior to the issuance of building permits and shall be implemented prior to occupancy.

2.6.1 Land Uses

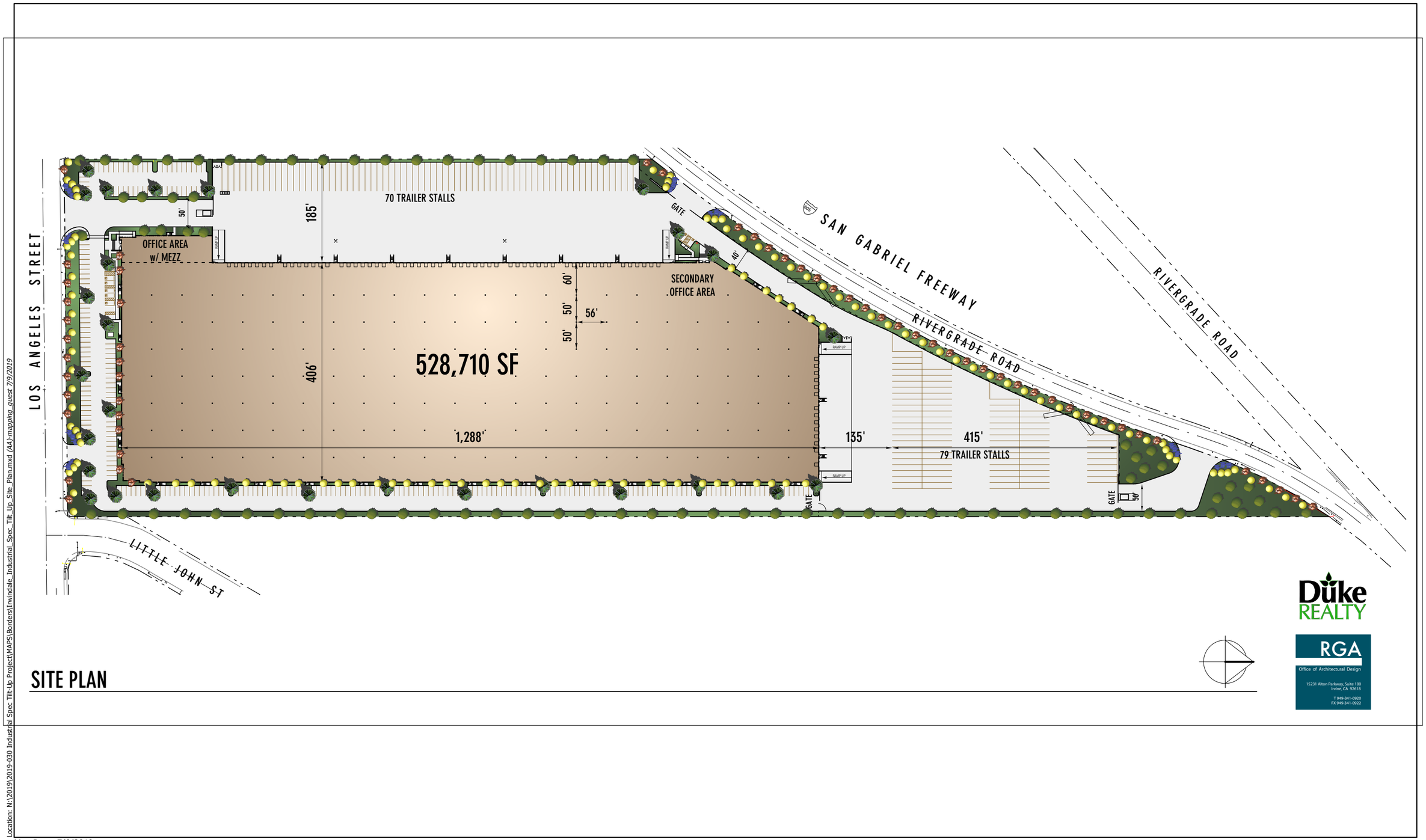
The site is located in an area zoned M-2 Heavy Manufacturing by the City of Irwindale General Plan (2008) and would develop an industrial warehouse project that is compatible with surrounding uses. According to the General Plan, this type of development is usually characterized by "intensive industrial operations that may also include outdoor storage of materials and equipment as an ancillary use" (City of Irwindale 2008). Compatibility with surrounding land uses and conformity with the City Commercial and Industrial Design Guidelines would be established through the City's project review and Site Development Permit. While the proposed warehouse use is consistent with the proposed Project site's current M-2 Heavy Manufacturing zoning designation, no specific tenant(s) have been identified to occupy the proposed building.

2.6.2 Circulation

The existing circulation system is comprised of key roadways that traverse defined traffic study intersections that serve the Project site. Principal among these are Los Angeles Street/Lower Azusa Road, Rivergrade Road, and Little John Street that directly serve the Project site. Regional access to the site is derived principally from Los Angeles Street via the nearby San Gabriel Freeway (I-605). A site-specific traffic study has been prepared according to City of Irwindale and Caltrans reporting requirements for inclusion in this EIR for the proposed Project (Appendix J). The study quantifies the volume of vehicular traffic anticipated to travel to and from the Project site. The traffic study also models the effects of Project-related traffic on the local and regional circulation system and identifies mitigation measures to reduce significant effects.

2.6.3 Infrastructure and Public Utilities

The Project site previously supported an active pre-cast concrete manufacturing facility that utilized existing utility connections at the site. The proposed Project would include new connections to existing gas, water, and sewer lines off Los Angeles Street. Additionally, it would involve the addition of fire hydrants, storm drains, drainage basins.



SITE PLAN

Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Borders\Irwindale_Industrial_Spec_Tilt_Up_Site_Plan.mxd (AA)-mapping_quest_7/9/2019

Map Date: 7/9/2019
Source: RGA

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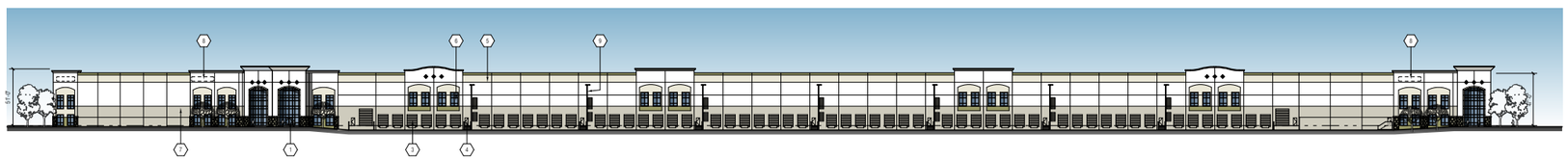
ENVIRONMENTAL CONSULTANTS

Figure 2.0-3. Site Plan

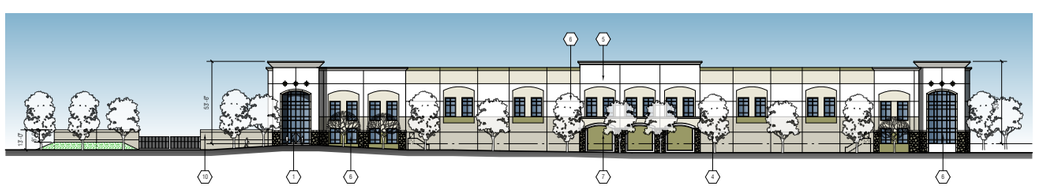
2019-030 Irwindale Industrial Spec Tilt-Up Project

NORTH ELEVATION
SCALE: 1" = 30'-0"

PARTIAL SOUTH ELEVATION
SCALE: 1/16" = 1'-0"



WEST ELEVATION
SCALE: 1" = 40'-0"



SOUTH ELEVATION
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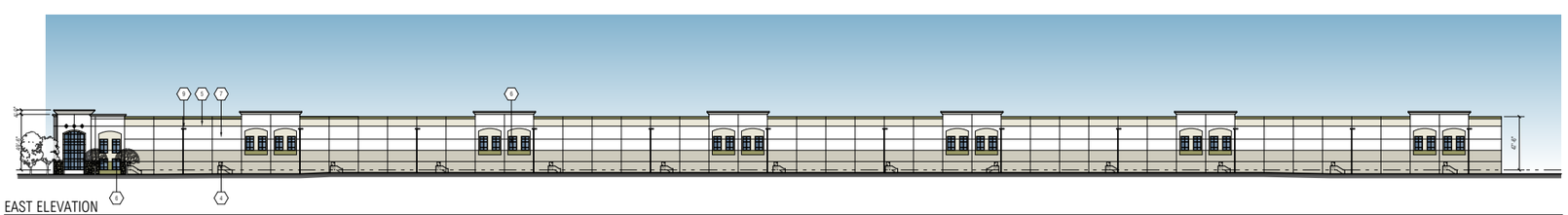


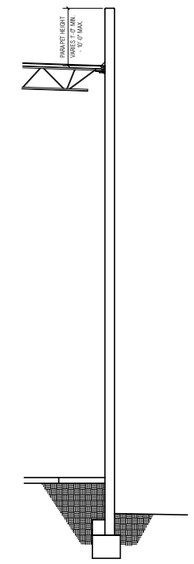
EAST ELEVATION
SCALE: 1" = 40'-0"

KEYNOTES

1. PRIMARY ENTRANCE.
2. PAINTED 12' WIDE X 15' HIGH LEVEL VERTICAL LIFT TRUCK DOOR.
3. PAINTED 9' WIDE X 10' HIGH VERTICAL LIFT TRUCK DOOR.
4. 3' X 7' PAINTED METAL MAN DOOR.
5. TYPICAL 2" WIDE X 3/4" DEEP HORIZONTAL / VERTICAL REVEAL.
6. BLUE GLASS IN ANODIZED ALUMINUM STOREFRONT FRAME SYSTEM.
7. PAINTED CONCRETE TILT-UP EXTERIOR WALL CONSTRUCTION.
8. PROPOSED FUTURE TENANT SIGNAGE LOCATION TO BE APPROVED UNDER A SEPARATE PERMIT.
9. DOWNSPOUTS ON THE EAST & WEST ELEVATIONS SHALL BE EXTERNAL AND PAINTED TO MATCH THE BUILDING.
10. PAINTED CONCRETE TILT-UP SCREEN WALL (ADJACENT TO NORTHWEST OFFICE POD ONLY) WITH REVEAL SCORES.

FINISH SCHEDULE

1. FIELD COLOR - PPG - OATMEAL - 1023-1
2. ACCENT COLOR - PPG - SHARKSKIN - 1025-4
3. ACCENT COLOR - PPG - DARK ASH - 1025-5
4. ACCENT COLOR - PPG - OLIVE GRAY - 1027-4
5. STONE VENEER - EL DORADO STONE - ANDANTE FIELDLEDGE
6. GLAZING - SEE KEYNOTE 5 - PPG VISTACOOL PACIFICA REFLECTIVE #2.



TYPICAL WALL SECTION
SCALE: 1/2" = 1'-0"
A

RGA
Office of Architectural Design
15231 Alton Parkway, Suite 100
Irvine, CA 92618
T 949-341-0920
FX 949-341-0922

CONSULTANT

PROFESSIONAL SEALS

LOS ANGELES STREET PROJECT

13131 LOS ANGELES STREET
CITY OF IRWINDALE, CA

Duke REALTY
200 SPECTRUM CENTER DRIVE
SUITE 1600
IRVINE, CA 92618
949-797-7038 PH
865-776-1344 CELL

MARK	DATE	DESCRIPTION
CD		
BID		
PC		
DD		
SD	9/1/18	SCHEMATIC DESIGN

RGA PROJECT NO:	18100.00
OWNER PROJECT NO:	00000.00
CAD FILE NAME:	18100-00-A3-1P
DRAWN BY:	CF
CHK'D BY:	DR

COPYRIGHT
RGA, OFFICE OF ARCHITECTURAL DESIGN

SHEET TITLE
ELEVATIONS

SHEET: A3-1P

Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Borders\Irwindale_Industrial_Spec_Tilt_Up_Building_Elevations.mxd (AA)-mapping_guest 7/9/2019

Map Date: 7/9/2019
Source: RGA

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ENVIRONMENTAL CONSULTANTS

Figure 2.0-4. Building Elevations

2019-030 Irwindale Industrial Spec Tilt-Up Project

The Infrastructure Element in the City General Plan (City of Irwindale 2008) details the City's utilities and service systems, including water, wastewater, and solid waste. According to the General Plan, the City has adequate domestic water service, public wastewater lines, roads, schools, trash, public facilities, parks and recreation, fire and police services for the level of development projected by the City. Language from the General Plan is included in the sections below.

2.6.3.1 Water Service

Several different water purveyors serve the City. The City of Azusa Water Department provides basic service to the largest portion of Irwindale from its most northeasterly boundaries to Ornelas Street, including all of the Santa Fe Dam area located to the east of the San Gabriel River Freeway. California-American Water Company, located in the City of San Marino, serves the area north of the Buena Vista Channel to the Duarte boundary with potable water for domestic, landscaping, and fire protection purposes. Finally, the San Gabriel Valley Water Company, located in the City of El Monte, serves approximately 50 customers in the Vulcan's Durbin Pit area as well as the area generally located between Lower Azusa Road and Ramona Boulevard. The Southern California Water Company serves a portion of the westernmost part of the City north of Live Oak Avenue.

The proposed Project site is served by the Valley County Water District (VCWD), which procures its water supplies primarily from the Main Basin and imported water. VCDW serves the southeasterly portion of the City as well as an area generally bounded by Arrow Highway, Live Oak Avenue, and the I-605 Freeway.

2.6.3.2 Wastewater

The Los Angeles County Sanitation Districts (Districts) provide all of Irwindale's sewer services. The majority of the City is served by Sanitation District 22; with a small portion of its southwestern area served by District 15. The District's trunk sewer lines extend throughout the City, with no under-served areas. The Los Angeles County Sewer Maintenance District, located in the City of Alhambra, provides maintenance for the City's six miles of sewers on a contract basis, including emergency services on a 24-hour basis.

2.6.3.3 Solid Waste

The City has an exclusive franchise agreement with Athens Services to provide mixed waste collection services and other available programs to its residents and business community. Athens Services currently transports all of Irwindale's commercial waste to a Materials Recovery Facility, where recyclable materials are sorted and then diverted from local landfills. Several quarry sites throughout the City are designated for landfill use.

2.7 Construction

Project construction is anticipated to begin in Spring/Summer 2020 if approved. Completion of construction and tenant occupancy is anticipated in late 2020. Construction of the Project would involve grading, paving, utility installation, building construction, and landscaping installation. The proposed phasing of demolition and construction is as follows: 1) demolition of the existing buildings, 2) excavation/shoring, 3) utilities installation, 4) building construction, and 5) repaving and landscaping.

The construction labor force would fluctuate depending on the phase of work. Building construction work force would vary during phases and would peak during building construction.

2.8 Required Permits and Approvals

The following approvals and regulatory permits would be required for implementation of the proposed Project:

- Site Plan and Design Review Permit (DA)
- Grading and Building permits
- Certification of the EIR

3.0 ENVIRONMENTAL IMPACT ANALYSIS

This main chapter of the DEIR includes separate sections for each environmental topic. The analysis begins with a review of the environmental setting, existing conditions on the site and in the surrounding area, and regulatory setting, in order to provide a context for the analysis of environmental effects that follows.

Determinations regarding levels of significance are developed for each topical issue area analyzed in the DEIR. These determinations are typically based upon existing technical studies and reports related to the project. The environmental issue areas to be evaluated in the DEIR are:

- Air Quality
- Cultural Resources
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

Direct, indirect, and cumulative effects of the project are discussed. Mitigation measures to reduce or avoid significant environmental impacts are identified.

Section 15128 of the CEQA Guidelines, Effects Found Not to be Significant, requires a statement that briefly indicates the reasons that various possible significant effects of a project were determined not to be significant and were, therefore, not discussed in detail in the DEIR. As stated in the CEQA Guidelines, such a statement may be contained in an attached copy of an Initial Study. The Initial Study for the proposed project is included in this EIR as Appendix A. As documented in Appendix A, the following issue areas were not found to be significant and were not further analyzed in the DEIR:

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Geology and Soils
- Mineral Resources

- Population and Housing
- Public Services
- Recreation
- Wildfire

Table 3.0-1 and Figure 3.0-1 that follow depict related areawide projects identified by the City of Irwindale and surrounding jurisdictions for purposes of evaluating cumulative impacts (CEQA Guidelines 15355).

Table 3.0-1. Related Area Projects

No	Project Name	Address	City	Land Use	Intensity	Units
1	Manning Pit	5175 Vincent Avenue	Irwindale	General Light Industrial	545.735	KSF
2	The Park @ Live Oak	1200 Arrow Highway	Irwindale	General Light Industrial	1,451.400	KSF
			Irwindale	Shopping Center	98.600	KSF
3	Panattoni	16203-16233 Arrow Highway	Irwindale	General Light Industrial	130.366	KSF
4	Panattoni	242 Live Oak Avenue	Irwindale	General Light Industrial	85.400	KSF
5	Ayala Industrial Bldg.	5589 Ayala Avenue	Irwindale	General Light Industrial	80.000	KSF
6	Irwindale Med. Clinic	15768 Arrow Highway	Irwindale	Medical/Dental Office	13.300	KSF
7	Wendy's Restaurant	15768 Arrow Highway	Irwindale	Fast-Food with Drive-Thru Window	2.300	KSF
8	Kaiser Med. Office Bldg.	12761 Schabarum Avenue	Irwindale	Medical/Dental Office	90.000	KSF
9	Reliance II	15990 Foothill Boulevard	Irwindale	General Light Industrial	1,853.000	KSF
			Irwindale	Shopping Center	10.000	KSF
10	City of Hope	1500 E. Duarte Road	Irwindale	Medical/Dental Office	108.804	KSF
11	Tentative Tract Map 82190	2424 & 2428 Mountain Avenue	Irwindale	Single-Family Homes	7.0	Dwelling Units
12	Tentative Parcel Map 82188	4826 Baca Avenue	Irwindale	Single-Family Homes	4.0	Dwelling Units
13	Tentative Parcel Map 82189	5134 Irwindale Avenue	Irwindale	Single-Family Homes	2.0	Dwelling Units
14	22-unit single-family subdivision	4422-4436 Bannister Street	El Monte	Single-Family Homes	22.0	Dwelling Units
15	3 new single-family units	5229 Hammill Road	El Monte	Single-Family Homes	3.0	Dwelling Units
16	3 2,747 Square foot res units on	11646 Lower Azusa Road	El Monte	Single-Family Homes	3.0	Dwelling Units
17	5-unit Planned Unit Development and one common private	11830 Lambert Avenue	El Monte	Single-Family Homes	5.0	Dwelling Units

Table 3.0-1. Related Area Projects

No	Project Name	Address	City	Land Use	Intensity	Units
18	5-detached 2-story res units	11613 Rio Hondo Parkway	El Monte	Single-Family Homes	5.0	Dwelling Units
19	23 unit condominium	14751 Badillo Street	Baldwin Park	Multifamily Housing (Mid-Rise)	23.0	Dwelling Units
20	97,945 SF 10 unit industrial warehouse condominium	5119 Azusa Canyon Rd	Baldwin Park	General Light Industrial	97.945	KSF
21	15 single family residential	15138 Nubia Street	Baldwin Park	Single-Family Homes	15.0	Dwelling Units
22	5 unit condominium	4232 LA Rica Avenue	Baldwin Park	Multifamily Housing (Low Rise)	5.0	Dwelling Units

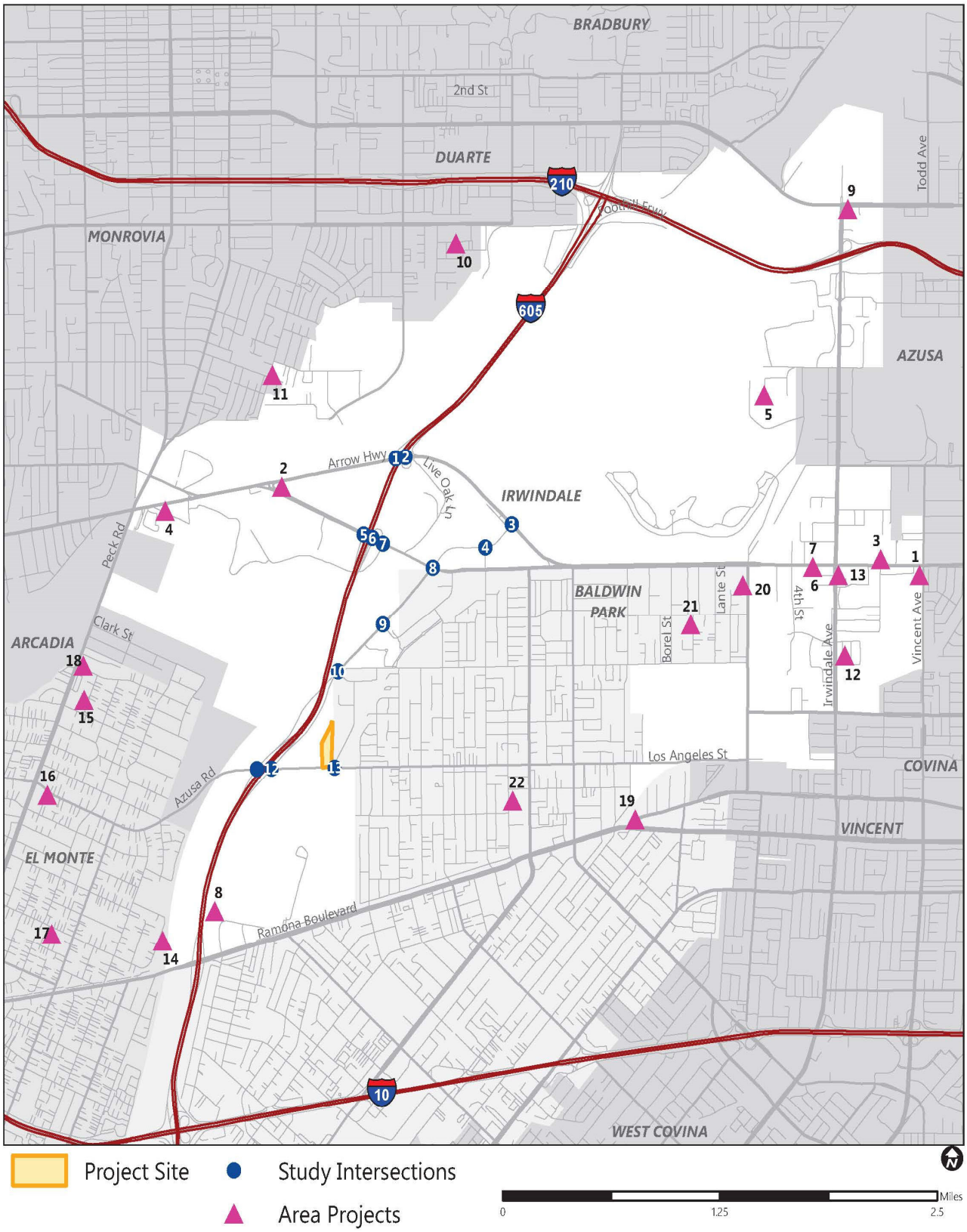

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Figure 3.0-1. Location of Related Area Projects

2019-030 Irwindale Industrial Spec Tilt-Up Project

3.1 Air Quality

3.1.1 Introduction

This section documents the results of an air quality assessment results from the combined Air Quality & Greenhouse Gas Assessment completed by ECORP for the 13131 Los Angeles Street Industrial Project (Project) in Irwindale, California. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the South Coast Air Quality Management District (SCAQMD), and in consideration of the Notice of Preparation (NOP) comment letters received from both the SCAQMD and California Air Resources Board (CARB) as presented in Appendix A of the Draft EIR prepared for the Project. Regional and local existing conditions are presented, along with pertinent emission standards and regulations.

3.1.2 Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the South Coast Air Basin (SoCAB), which encompasses the Project site, pursuant to the regulatory authority of the SCAQMD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project area.

CARB divides the state into air basins that share similar meteorological and topographical features. The City of Irwindale lies in the SoCAB, which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. The air basin is on a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean on the southwest, with high mountains forming the remainder of the perimeter (SCAQMD 1993). Temperature and precipitation, humidity, wind, and inversion patterns within the SoCAB are described in the Appendix B report.

3.1.2.1 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O3), coarse particulate matter (PM10), and fine particulate matter (PM2.5) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO2), and sulfur dioxide (SO2) are considered to be local pollutants because they tend to accumulate in the air locally. Particulate matter (PM) is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 3.1-1.

Table 3.1-1. Criteria Air Pollutants- Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

Carbon Monoxide

CO, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most sever meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances (i.e., up to 600 feet or 185 meters) of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the SoCAB are in compliance with the state and federal one- and eight-hour standards.

Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NOx). Motor vehicle emissions are the main source of NOx in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and

influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROG and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NOx forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SOx) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

3.1.2.2 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

3.1.2.3 Ambient Air Quality

Ambient air quality at the Project site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. The Azusa (803 North Loren Avenue, Azusa) air quality monitoring station, located approximately six miles northeast of the development site, is the closest station to the site. The Azusa monitoring station monitors ambient concentrations of O_3, $PM_{2.5}$, PM_{10}, the three pollutants in nonattainment of air quality standards in the Project region. Ambient emission concentrations will vary

due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the development area.

Table 3.1-2 summarizes the published data concerning O_3, $PM_{2.5}$, PM_{10} since 2016 from the Azusa monitoring station for each year that the monitoring data is provided. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region.

Table 3.1-2. Summary of Ambient Air Quality Data

Pollutant Standards	2016	2017	2018
O_3			
Max 1-hour concentration (ppm)	0.146	0.152	0.139
Max 8-hour concentration (ppm) (state/federal)	0.107 / 0.106	0.114 / 0.114	0.100 / 0.099
Number of days above 1-hour standard (state/federal)	30 / 4	38 / 7	24 / 3
Number of days above 8-hour standard (state/federal)	40 / 36	64 / 62	43 / 42
PM_{10}			
Max 24-hour concentration (µg/m3) (state/federal)	74.6 / 74.0	83.9 / 83.9	78.3 / 78.3
Number of days above 24-hour standard (state/federal)	* / 0	* / 0	59.2 / 0
$PM_{2.5}$			
Max 24-hour concentration (µg/m3) (state/federal)	32.1 / 32.1	24.9 / 24.9	41.8 / 41.8
Number of days above federal 24-hour standard	0	0	0

Source: CARB 2019
µg/m3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the SoCAB is included in Table 3.1-3.

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$ (CARB 2018a). The Project region is also a nonattainment area for the federal lead

standard. This is a result of operations at the Ports of Los Angeles and Long Beach coupled with a few specific industrial processes that occur in the region, such as battery recycling. The Project would not be source of lead.

Table 3.1-3. Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2018a

3.1.2.4 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The nearest sensitive receptors to the Project site are residences located approximately 205 meters (670 feet) to the east. In addition to these residences, three schools (Walnut Elementary School, Burch Elementary School, and Olive Middle School) are located within one mile of the Project site.

3.1.3 Regulatory Setting

Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that CO_2 is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those “sensitive receptors” most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults

can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SoCAB for the criteria pollutants.

State

California Clean Air Act

The CCAA allows the State to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The 2016 Air Quality Management Plan (2016 Air Quality Management Plan [AQMP]) is the SIP for the SoCAB. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air in the SoCAB and those portions of the Salton Sea Air Basin that are under SCAQMD's jurisdiction. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple goals in partnership with other entities promoting reductions in greenhouse gases and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The most effective way to reduce air pollution impacts is to reduce emissions from mobile sources. The AQMP relies on a regional and multi-level partnership of governmental agencies at the federal, state, regional, and

local levels. These agencies (USEPA, CARB, local governments, Southern California Association of Governments [SCAG] and the SCAQMD) are the primary agencies that implement the AQMP programs. The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including SCAG's latest Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. The 2016 AQMP includes integrated strategies and measures to meet the NAAQS. The current status of the SIPs for the SoCAB's nonattainment pollutants are shown below:

- On November 28, 2007, CARB submitted a SIP revision to the USEPA for O_3, $PM_{2.5}$ (1997 Standard), CO, and NO_2 in the SoCAB. This revision is identified as the "2007 South Coast SIP". The 2007 South Coast SIP demonstrates attainment of the federal $PM_{2.5}$ standard in the SoCAB by 2014 and attainment of the federal eight-hour O_3 standard by 2023. This SIP also includes a request to reclassify the O_3 attainment designation from "severe" to "extreme". The USEPA approved the redesignation effective June 4, 2010. The "extreme" designation requires the attainment of the eight-hour O_3 standard in the SoCAB by June 2024. CARB approved $PM_{2.5}$ SIP revisions in April 2011 and the O_3 SIP revisions in July 2011. The USEPA approved the $PM_{2.5}$ SIP in 2013 and has approved 46 of the 61 1997 8-hour O_3 SIP requirements (USEPA 2018a). In 2014, the USEPA proposed a finding that the SoCAB has attained the 1997 $PM_{2.5}$ standards. In 2016, the USEPA determined that the SoCAB had attained the 1997 $PM_{2.5}$ standards; however the SoCAB was not redesignated as an attainment area because the USEPA had not approved a maintenance plan and additional requirements under the CAA had not been met (USEPA 2018b).
- In 2012, the SCAQMD adopted the 2012 AQMP, which was a regional and multiagency effort (the SCAQMD, CARB, SCAG, and the USEPA). The primary purposes of the 2012 AQMP were to demonstrate attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 and to update the USEPA-approved 8-hour Ozone Control Plan. In 2012, the 2012 AQMP was submitted to CARB and the USEPA for concurrent review and approval for inclusion in the SIP. The 2012 AQMP was approved by CARB on January 25, 2013.
- In 2017, the SCAQMD adopted the 2016 AQMP. The 2016 AQMP includes strategies and measures to meet the following NAAQS:
    - 2008 8-hour O_3 (75 parts per billion [ppb]) by 2013
    - 2012 Annual $PM_{2.5}$ (12 $\mu g/m^3$) by 2025
    - 1997 8-hour O_3 (80 ppb) by 2023
    - 1979 1-hour O_3 (120 ppb) by 2022
    - 2006 24-hour $PM_{2.5}$ (35 $\mu g/m^3$) by 2019

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to

designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Mobile Source Strategy

In 2016 CARB released the update to the Mobile Source Strategy (Strategy). This demonstrates how the state will meet air quality standards, achieve greenhouse gas (GHG) emission reduction targets, decrease health risks from transportation emissions, and reduce petroleum consumption over the next 15 years. This includes engine technology that is effectively 90 percent cleaner than today's current standards, with clean, renewable fuels comprising half the fuels burned.

The strategy also relies on the increased use of renewable fuels to ensure that air pollutant reductions are achieved while meeting the ongoing demand for liquid and gaseous fuels in applications where combustion technologies remain, including in heavy-duty trucks and equipment and light-duty hybrid vehicles. The estimated benefits of the Mobile Source Strategy in reducing emissions from mobile sources includes an 80 percent reduction of O_3-forming emissions (ROG and NOx), and a 45 percent reduction in DPM emissions in the SoCAB from current levels. Statewide, the Strategy would also result in a 45 percent reduction of GHG emissions and a 50 percent reduction in the consumption of petroleum-based fuels.

Governor's Sustainable Freight Action Plan

Under the Governor's Sustainable Freight Action Plan strategy, CARB is working with agency partners and stakeholders to implement a broad program that includes regulations, incentives, and policies designed to support the transformation to a more sustainable freight system and reduce community impacts from freight operations in California. The Governor's Sustainable Freight Action Plan identifies strategies and actions to achieve a sustainable freight transportation system that meets California's environmental, energy, mobility, safety and economic needs. The plan also identifies and initiates corridor-level freight pilot projects within the state's primary trade corridors that integrate advanced technologies, alternative fuels, freight and fuel infrastructure and local economic development opportunities. The plan seeks to improve the state freight system efficiency 25 percent by "increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030" as well as to deploy over 100,000 zero-emission freight vehicles and equipment and maximizing near-zero equipment and equipment powered by renewable energy by 2030.

Diesel Risk Reduction Plan

The identification of DPM as a TAC in 1998 led CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Risk Reduction Plan) in October 2000. The Risk Reduction Plan's goals include an 85 percent reduction in DPM by 2020 from the 2000 baseline (CARB 2000). The Risk Reduction Plan includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles

In 2008, CARB approved the Truck and Bus Regulation to significantly reduce PM and NO_X emissions from existing diesel vehicles operating in California. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks had to be retrofitted with PM filters beginning January 1, 2012, and older trucks had to be replaced by January 1, 2015. By January1, 2023, nearly all trucks and buses will need to have 2010-model-year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. Small fleets with three or fewer diesel trucks can delay compliance for heavier trucks by reporting and there are a number of extensions for low-mileage construction trucks, early PM filter retrofits, adding cleaner vehicles, and other situations. Privately and publicly owned school buses have different requirements.

Heavy-Duty Vehicle Idling Emission Reduction Program

The purpose of CARB's ATCM *to Limit Diesel-Fueled Commercial Motor Vehicle Idling* is to reduce public exposure to DPM and criteria pollutants by limiting the idling of diesel-fueled commercial vehicles.[2] The driver of any vehicle subject to this ATCM is prohibited from idling the vehicle's primary diesel engine for greater than five minutes at any location and is prohibited from idling a diesel-fueled auxiliary power system for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

CARB Final Regulation Order, *Requirements to Reduce Idling Emissions from New and In-Use Trucks*, beginning in 2008, requires that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged.

[2] *The ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling is codified in Title 13 of the* CCR*, Chapter 10, § 2485.*

Local

South Coast Air Quality Management District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties, including the Project site. The agency's primary responsibility is ensuring that the federal and California ambient air quality standards (FAAQS and CAAQS, respectively) are attained and maintained in the SoCAB. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities. All projects are subject to SCAQMD rules and regulations in effect at the time of construction.

The following is a list of noteworthy SCAQMD rules that are required of construction activities associated with the Proposed Project:

- **Rule 201 & Rule 203 (Permit to Construct & Permit to Operate)** – Rule 201 requires a "Permit to Construct" prior to the installation of any equipment "the use of which may cause the issuance of air contaminants . . ." and Regulation II provides the requirements for the application for a Permit to Construct. Rule 203 similarly requires a Permit to Operate.
- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.
- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible PM are prohibited from crossing any property line. This rule is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM_{10} suppression techniques are summarized below.

    a) Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.
    b) All onsite roads will be paved as soon as feasible or watered periodically or chemically stabilized.
    c) All material transported offsite will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
    d) The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.

e) Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.
- **Rule 1401 (New Source Review of Toxic Air Contaminants**) – This rule requires new source review of any new, relocated, or modified permit units that emit TACs. The rule establishes allowable risks for permit units requiring permits pursuant to Rules 201 and 203 discussed above.
- **Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities**) – This rule specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.

Additionally, the SCAQMD has adopted the Air Toxics Control Plan (March 2000, revised March 26, 2004), which is a planning document designed to examine the overall direction of the SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within the SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be reported back to the Board periodically.

The SCAQMD has conducted an in-depth analysis of the TACs and their resulting health risks for all of Southern California. This study, the "Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV," shows that cancer risk has decreased more than 50 percent between MATES III (2008a) and MATES IV (2015). MATES IV is the most comprehensive dataset documenting the ambient air toxic levels and health risks associated with the SoCAB emissions. The SCAQMD is currently in the process of developing MATES V. The MATES IV study represents the baseline health risk for a cumulative analysis. MATES IV estimates the average excess cancer risk level from exposure to TACs is less than 400 in one million basin-wide. These model estimates were based on monitoring data collected at 10 fixed sites within the SoCAB. None of the fixed monitoring sites are within the local area of the Project site. However, MATES IV has extrapolated the excess cancer risk levels throughout the basin by modeling the specific grids. MATES IV modeling predicted an excess cancer risk of 427 in one million for the Project area. DPM is included in this cancer risk along with all other TAC sources. DPM accounts for 68 percent of the total risk shown in MATES-IV.

3.1.4 Impact Analysis

3.1.4.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

3.1.4.2 SCAQMD Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (SCAQMD) may be relied upon to make the above determinations. According to the SCAQMD, an air quality impact is considered significant if the Proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in Table 3.14.

Table 3.1-4. SCAQMD Regional Significance Thresholds – Pounds per Day

Air Pollutant	Construction Activities	Operations
Reactive Organic Gas	75	55
Carbon Monoxide	550	550
Nitrogen Oxide	100	55
Sulfur Oxide	150	150
Coarse Particulate Matter	150	150
Fine Particulate Matter	55	55

Source: SCAQMD 1993 ($PM_{2.5}$ threshold adopted June 1, 2007)

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

3.1.4.3 Localized Significance Thresholds

In addition to regional significance thresholds, the SCAQMD developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at new development sites (offsite mobile source emissions are not included in the LST analysis protocol). LSTs represent the maximum emissions that can be generated at a Project site without expecting to cause or substantially contribute to an exceedance of the most stringent national or State ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the Project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. LST analysis for construction is applicable for all projects that disturb five acres or less on a single day. Irwindale is located within SCAQMD SRA 9 (East San Gabriel Valley). Table 3.1-5 shows the LSTs for a one-acre, two-acre, and five-acre project site in SRA 9 with sensitive receptors located within 200 meters of the Project site (as previously described, the nearest sensitive receptors are residences located approximately 205 meters [670 feet] east of the Project site).

Table 3.1-5. Local Significance Thresholds

Project Size	Pollutant (pounds per day Construction/Operations)			
	NO_2	CO	PM_{10}	$PM_{2.5}$
1 Acre	251 / 251	4,803 / 4,803	75 / 19	22 / 6
2 Acres	284 / 284	5,658 / 5,658	84 / 20	26 / 7
5 Acres	368 / 368	7,600 / 7,600	105 / 26	35 / 9

Source: SCAQMD 2009

3.1.4.4 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by CARB and the SCAQMD, as well as in consideration of the NOP comment letters received from both the SCAQMD and CARB as presented in Appendix A of the Draft EIR prepared for the Project. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were primarily calculated using CalEEMod model defaults for Los Angeles County. Operational air pollutant emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA Corporation (2019). This analysis is based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD.

Additionally, DPM concentration generated from Project haul trucks and the associated dispersion was modeled using the USEPA's AERMOD air toxic dispersion model. AERMOD is a steady-state plume model

that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. The resultant concentration values were then used to calculate chronic and carcinogenic health risk using the standardized equations contained in the California Office of Environmental Health Hazard Assessment's (OEHHA) *Guidance Manual for Preparation of Health Risk Assessments* (2015).

3.1.4.5 Project Impact Analysis

Project Construction-Generated Criteria Air Quality Emissions

Regional Construction Significance Analysis

Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation. Construction activities would be subject to SCAQMD Rule 403, which requires taking reasonable precautions to prevent the emissions of fugitive dust, such as using water or chemicals, where possible, for control of dust during the clearing of land and other construction activities.

Construction-generated emissions associated the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment A for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 3.1-6. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD's thresholds of significance.

Table 3.1-6. Construction-Related Emissions (Regional Significance Analysis)

Construction Year	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction in 2020	18.56	50.26	48.06	0.10	9.37	5.93
Construction in 2021	18.09	41.15	46.57	0.10	4.22	2.34
SCAQMD Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Exceed SCAQMD Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emission reduction/credits for construction emissions are applied based on the required implementation of SCAQMD Rule 403. The specific Rule 403 measures applied in CalEEMod include the following: sweeping/cleaning adjacent roadway access areas daily; washing equipment tires before leaving the construction site; water exposed surfaces three times daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied.
Emissions estimates account for the site preparation and grading of 24.88 acres along with the demolition of 62,500 square feet of building space. Building construction, paving, and painting are assumed to occur simultaneously.

As shown in Table 3.1-6, emissions generated during Project construction would not exceed the SCAQMD's regional thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

Localized Construction Significance Analysis

As noted in CARB's NOP letter concerning the Proposed Project, diesel emissions generated during the construction of the Project could potentially negatively impact the community to the east of the Project site. As previously stated, the nearest sensitive receptors to the Project site are the residences approximately 205 meters (670 feet) east of the Project site. In addition to these residences, three schools (Walnut Elementary School, Burch Elementary School, and Olive Middle School) are located within one mile of the Project site. In order to identify localized, air toxic-related impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008b]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with Project-specific level proposed projects.

For this Project, the appropriate SRA for the LSTs is the East San Gabriel Valley SRA 9. LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The Proposed Project would disturb ±24.88 acres during construction. As previously described, the SCAQMD has produced lookup tables for projects that disturb less than or equal to five acres daily. The SCAQMD has also issued guidance on applying the CalEEMod emissions software to LSTs for projects greater than five acres. Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 3.1-7 is used to determine the maximum daily disturbed-acreage for comparison to LSTs.

Table 3.1-7. Equipment-Specific Grading Rates

Construction Phase	Equipment Type	Acres Graded/Disturbed per 8-Hour Day	Equipment Quantity	Operating Hours per Day	Acres Graded per Day
Site Preparation	Rubber Tired Dozers	0.5	3	8	1.5
	Tractors/ Loaders/ Backhoes	0.5	4	8	2.0
				Site Preparation Total:	**3.5**
Grading	Excavators	0.0	2	8	0.0
	Rubber Tired Dozer	0.5	1	8	0.5
	Graders	0.5	1	8	0.5
	Scraper	1.0	2	8	2.0
	Tractors/ Loaders/ Backhoes	0.5	2	8	1.0
				Grading Total:	**4.0**
				Maximum Total Acres Graded per Day:	**4.0**

As shown in Table 3.1-7, Project implementation could potentially disturb up to 3.5 acres daily during the site preparation phase of construction, and 4.0 acres daily during the grading phase of construction. Therefore, the grading phase of construction represents the most potent ground-disturbing construction activities. Thus, the LST threshold value for a 3.5-acre construction site were sourced from the LST lookup tables for site preparation and the LST threshold value for a 4.0-acre construction site were sourced from the LST lookup tables for Project grading activities.

The nearest sensitive receptors to the Project site are the residences in Baldwin Park located approximately 205 meters (670 feet) east of the Project site. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, LSTs for receptors located at 200 meters were utilized in this analysis. The SCAQMD's methodology clearly states that "off-site mobile emissions from a project should not be included in the emissions compared to LSTs." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "onsite" emissions outputs were considered. Table 3.1-8 presents the results of localized emissions during the grading phase of construction, which is construction activity that disturbs the most acreage daily. The LSTs reflect a maximum disturbance of 3.5 acres daily during site preparation activities and 4.0 acres daily during grading activities, at 200 meters for the Proposed Project.

Table 3.1-8. Construction-Related Emissions (Localized Significance Analysis)

Activity	Pollutant (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Project Site Preparation	42.41	21.51	9.24	5.89
SCAQMD Localized Significance Threshold (3.5 acres of disturbance)	*326.00*	*6,629.00*	*94.50*	*30.50*
Project Site Grading	50.19	31.95	5.55	3.40
SCAQMD Localized Significance Threshold (4.0 acres of disturbance)	*340.00*	*6,952.67*	*98.00*	*32.00*
Exceed SCAQMD Localized Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emission reduction/credits for construction emissions are applied based on the required implementation of SCAQMD Rule 403. The specific Rule 403 measures applied in CalEEMod include the following: sweeping/cleaning adjacent roadway access areas daily; washing equipment tires before leaving the construction site; water exposed surfaces three times daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied.
Emissions estimates account for the site prep and grading of 24.88 acres along with the demolition of 62,500 square feet of buildings.

Table 3.1-8 shows that the emissions of these pollutants on the peak day of construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, significant impacts would not occur concerning LSTs during construction activities. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative. The SCAQMD Environmental Justice Enhancement Initiative program seeks to ensure that everyone has the right to equal protection from air pollution. The Environmental Justice Program is divided into three categories, with the LST protocol promulgated under Category I: *Further-Reduced Health Risk*. Thus, the fact that onsite Project construction emissions would be generated at rates below the LSTs for NO_x, CO, PM_{10}, and $PM_{2.5}$ demonstrates that the Project would not adversely impact the neighboring community to the east.

Project Operations Criteria Air Quality Emissions

Regional Operational Significance Analysis

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as ozone precursors such as ROG and NO_X. Project-generated increases in emissions would be predominantly associated with motor vehicle use. As previously described, operational air pollutant emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA (2019). As previously described, the SCAQMD NOP comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 sf of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD. Consistent with SCAQMD recommendations, in order to more accurately account for the trip distribution patterns of freight trucks, the average trip length

is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

Long-term operational emissions attributable to the Project are identified in Table 3.1-9 and compared to the regional operational significance thresholds promulgated by the SCAQMD.

Table 3.1-9. Operational-Related Emissions (Regional Significance Analysis)

Emission Source	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer Emissions						
Area	11.81	0.00	0.05	0.00	0.00	0.00
Energy	0.28	2.57	2.15	0.01	0.19	0.19
Mobile	23.43	250.71	431.59	2.08	137.06	37.98
Total:	**35.52**	**253.29**	**433.80**	**2.09**	**137.26**	**38.18**
SCAQMD Regional Significance Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed SCAQMD Regional Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
Winter Emissions						
Area	11.81	0.00	0.05	0.00	0.00	0.00
Energy	0.28	2.57	2.15	0.01	0.19	0.19
Mobile	23.04	259.77	399.87	2.00	137.07	37.98
Total:	**35.14**	**262.34**	**402.09**	**2.02**	**137.26**	**38.18**
SCAQMD Regional Significance Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed SCAQMD Regional Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emissions projections account for a trip generation rate and fleet mix identified by KOA 2019.Specifically, KOA estimates the Project generation of 3,459 average vehicle trips daily, 16.2 percent of which would be medium-heavy duty and heavy-heavy duty trucks. The average trip length is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

As shown in Table 3.1-9, the Project's emissions associated with operations would exceed the SCAQMD significance threshold for NO_x. As previously described, NO_x is a precursor of O_3, a pollutant for which the SoCAB is classified nonattainment.

O_3 is produced when ROG and NO_x undergo photochemical reactions that occur only in the presence of sunlight. O_3 is a very difficult pollutant to regulate due to the time it takes to create and the fact that it can be transported away from its source by wind and meteorological air patterns. People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air

quality standards. Numerous scientific studies have linked ground level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses. O_3 and NO_x have been decreasing in California since 1975 and are projected to continue to decrease in the future. Although vehicle miles traveled across the state continue to increase, NO_x levels are decreasing due to the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_x emissions form electric utilities have also decreased due to the use of cleaner fuels and renewable energy.

SCAQMD's 2016 AQMP, previously described, identifies robust NO_X reductions from new regulations on Regional Clean Air Incentives Market (RECLAIM) facilities, non-refinery flares, commercial cooking, and residential and commercial appliances. Such combustion sources are already heavily regulated with the lowest NO_X emissions levels achievable, yet there are opportunities to require and accelerate replacement with cleaner zero-emission alternatives, such as residential and commercial furnaces, pool heaters, and backup power equipment. The SCAQMD plans to achieve such replacements through a combination of regulations and incentives. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies. The 2016 AQMP also emphasizes that beginning in 2012, continued implementation of previously adopted regulations have been leading to NO_X emission reductions of 68 percent by 2023 and 80 percent by 2031. With the addition of 2016 AQMP regulatory measures, a 30 percent reduction of NO_X from stationary sources is expected in the 15-year period between 2008 and 2023. This is in addition to significant NO_X reductions from stationary sources achieved in the decades prior to 2008.

NO_x is produced as a result of incomplete fossil fuel combustion. The majority of these emissions would be generated by mobile sources, which is an emission source that cannot be regulated by the City of Irwindale. CARB is primarily responsible for controlling pollution from motor vehicles. The air district must adopt rules to achieve and maintain the SAAQS and FAAQS within their jurisdiction. A reduction of vehicle trips to and from the Proposed Project site would reduce the amount of mobile emissions. Methods of reducing vehicle trips include carpooling, transit, cycling, and pedestrian connections. However, this Project is proposing an industrial warehouse and the reduction of vehicle trips is only feasible for the employees working in the facility, though the majority of traffic trips instigated by the Project would be related to haul truck trips transporting freight.

Foothill Transit provides transit service to the City of Irwindale. The use of transit service over passenger automobiles can result in a reduction of daily air pollutants. The nearest bus stops to the Proposed Project are located 0.14 mile to the east at Los Angeles Street and Hornbrook Avenue. Additionally, the implementation element of the Irwindale General Plan Public Transit Review Program evaluates local transit to ensure circulation goals and policies are achieved.

As described in the Regulatory Framework discussion above, the State of California has implemented numerous strategies pertaining to trucks and the reduction of emissions that directly apply to the Project. Urban goods delivery is an essential component of the greater freight system and vital to the urban economy. While urban goods delivery represents a small share of urban traffic, it generates a disproportionate amount of pollution emissions. The State of California promulgates policies designed

and implemented to improve the efficiency and environmental footprint of the urban freight system, including the introduction of zero and near-zero emission vehicles—a strategy embedded in the Governor's Sustainable Freight Action Plan as well as CARB's AB 32 Scoping Plan, SIP, and Mobile Source Strategy.

Additionally, the Project is proposing an industrial warehouse use in close proximity to the I-605, I-10, and I-210, which are major regional freeway corridors. Further, the I-10 corridor has been identified as a "Major International Trade Highway Route" in the California State Goods Movement Action Plan (2007) and therefore serves to accommodate existing truck trips along the interstate. The Goods Movement Action Plan is a statewide initiative to improve and expand California's goods movement industry and infrastructure in a manner which will increase mobility and relieve traffic congestion as well as improve air quality and protect public health. The Plan further identifies I-10 (located 2.2 miles south of the Project site and linked to the Project site by I-605) as a "Priority Corridor" for development toward more efficient goods movement and anticipates that the development of good movement-supporting facilities, such as industrial warehouses like that proposed by the Project, will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related air pollutant emissions and improve air quality.

Both CARB and the SCAQMD have prepared NOP letters concerning the Proposed Project that contain several mitigation measure recommendations to reduce mobile-source criteria air pollutant emissions generated by Project operations. The following CARB and SCAQMD mitigation is recommended for the Proposed Project:

AQ-1: Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the City of Irwindale Community Development Department Manager.

- The proposed warehouse shall be constructed with electrical conduits provided to each dock door in order to accommodate future electric charging for trucks to plug-in should future technology allowing trucks to operate partially on electricity become available.
- At least five percent of all vehicle parking spaces shall include EV charging stations. Further, electrical hookups to plug in any onboard auxiliary equipment shall be provided for Project trucks. Electrical panels shall be appropriately sized to allow for future expanded use.
- The majority of all loading/unloading docks and trailer spaces shall be equipped with electrical hookups for trucks with transport refrigeration units or auxiliary power units.
- Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations. At a minimum each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel

trucks to restrict idling to no more than five minutes; and 3) telephone numbers of the building facilities manager and CARB to report violations.

- Locate any check-in points for trucks well inside the Project site to ensure that there are no trucks queuing outside of the facility.
- Ensure that truck traffic within the Project site is located away from the eastern property line (the property line closest to sensitive receptors) to the maximum extent possible.
- The Project site is 205 meters (673 feet) from the nearest sensitive receptors at the nearest residences. Establish a buffer zone of at least 300 meters (984 feet) between truck loading zones/docks and the nearest sensitive receptors to the east.
- Restrict overnight parking in the residential communities to the east of the Project and establish overnight parking within the Project site where trucks can be stored overnight.
- All service equipment (i.e., forklifts) used within the site shall be electric or compressed natural gas-powered.
- In order to promote alternative fuels, and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants with information related to SCAQMD's Carl Moyer Program, or other such programs that promote truck retrofits or "clean" vehicles and information including, but not limited to, the health effect of diesel particulates, benefits of reduced idling time, CARB regulations, and importance of not parking in residential areas. Tenants shall be notified about the availability of: 1) alternatively fueled cargo handling equipment; 2) grant programs for diesel-fueled vehicle engine retrofit and/or replacement; 3) designated truck parking locations in the project vicinity; 4) access to alternative fueling stations proximate to the site that supply compressed natural gas; and 5) the United States Environmental Protection Agency's SmartWay program.
- There shall be provisions for preferential parking for carpoolers and vanpools.

Even with implementation of CARB and SCAQMD recommendations in mitigation measure AQ-1, **Project-related heavy-duty truck travel would result in SCAQMD daily significance thresholds being exceeded.** This results in a cumulatively considerable net increase of NOx (an O3 precursor), for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

While California state strategies such as the Governor's Sustainable Freight Action Plan, CARB's AB 32 Scoping Plan, and the Mobile Source Strategy will improve the efficiency and environmental footprint of the urban freight system, including the introduction of zero and near-zero emission vehicles, it is not currently feasible to reduce projected Project emissions to levels below the regional significance thresholds.

The SCAQMD has set its CEQA significance thresholds for NO_X at 10 tons per year (expressed as 55 pounds per day) based on the federal CAA, which defines a major stationary source (in extreme ozone

nonattainment areas such as the SoCAB) as emitting 10 tons per year. The thresholds correlate with the trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program[3] was created by the federal CAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based FAAQS. The FAAQS establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

As previously stated, NO_X is a precursor-emissions that forms O_3 in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so O_3 may be formed at a distance downwind from the sources. Breathing ground-level O_3 can result health effects that include reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily O_3 concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that O_3 can make asthma symptoms worse and can increase sensitivity to asthma triggers.

Table 3.1-9 shows that a large proportion of the Project's NO_X, emissions are from mobile sources. Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. CARB (a branch of the CalEPA is primarily responsible for controlling pollution from motor vehicles. The air districts must adopt rules to achieve and maintain the SAAQS and FAAQS within their jurisdictions.

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained *(Sierra Club v. County of Fresno [Friant Ranch, L.P.]* [2018] 6 Cal.5th 502, Case No. S219783). As noted above and shown in Table 3.1-9, the Project's operational emissions would exceed the SCAQMD's NO_X, significance thresholds, resulting in an impact. Pursuant to Rule 8.520(f) of the Rules of the California Court, the SCAQMD and the San Joaquin Valley Air Pollution Control District (SJVAPCD) filed amicus curiae briefs in regard to this case. In both briefs, SCAQMD and SJVAPCD provided technical explanations as to why it may not be feasible for a project to relate the expected adverse air quality impacts to likely health consequences. For the reasons set forth by the SCAQMD and SJVAPCD (Appendix B), the Proposed Project's significant air quality impacts currently cannot feasibly be related to likely health consequences. The technical demands for feasibly and accurately relating the adverse air quality impacts to likely health consequences are too high for this Proposed Project at this time. The technical challenges are listed in Appendix B, with the SCAQMD and SJVAPCD amicus briefs providing support on the findings for the Proposed Project.

[3] Code of Federal Regulation (CFR*) [i.e., PSD (40 CFR 52.21, 40* CFR *51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S)*

Therefore, for the reasons set forth in Appendix B, it is not currently feasible to relate the Proposed Project's regional NO_x impacts to likely health consequences. The SCAQMD is responsible for assessing air pollutant impacts regionally, and the potential health consequences from those on a regional basis. The current evaluation on the limitations and uncertainties of existing tools is consistent with SCAQMD findings. Currently available regional modeling tools are not designed to capture changes in pollutant concentrations for this Proposed Project that would be meaningful. This is due in part to a relatively coarse spatial resolution (e.g., greater than 4 x 4 kilometers) which makes it speculative to discern regional Project impacts on air quality.

Localized Operational Significance Analysis

According to the SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a proposed project only if the project includes stationary sources or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., warehouse or transfer facilities). The Proposed Project includes one 528,710-sf warehouse. Therefore, in the case of the Proposed Project, the operational phase LST protocol is applied. Operational LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$.

The nearest sensitive receptors to the Project site are single-family residences located to the east of the site. The nearest residence is approximately 0.13 mile (670 feet/205 meters) distant. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, operational LSTs for receptors located at 200 meters were utilized in this analysis.

The appropriate SRA for the LSTs is the East San Gabriel Valley area (SRA 9) since this area includes the Project site. As described, the SCAQMD has produced lookup tables for projects that disturb one, two and five acres. While the Proposed Project site is ±24.88 acres, the LST threshold value for a five-acre site was employed from the LST lookup tables. This is conservative since the analysis will only account for the dispersion of air pollutants over five acres before reaching sensitive receptors, as opposed to accounting for the dispersion of air pollutants over a greater 24.88-acre area.

For a worst-case scenario assessment, the emissions shown in Table 3.1-10 include all "onsite" project-related stationary (area) sources and 10 percent of the Project-related mobile sources. Considering that the longest weighted trip length used in CalEEMod for the Project is approximately 49.8 miles, 10 percent of this total would represent an onsite travel distance for each car and truck of approximately 2.49 miles; thus, the 10 percent assumption is conservative and would tend to overstate the actual impact.

Table 3.1-10. Operational-Related Emissions Attributable to Project Buildout (Localized Significance Analysis)

Source	Pollutant (pounds per day)			
	NO_2	CO	PM_{10}	$PM_{2.5}$
Onsite Emissions (Summer)	25.97	40.03	13.72	3.81
Onsite Emissions (Winter)	25.32	43.38	13.72	3.81
SCAQMD Localized Significance Threshold	*368.00*	*7,600.00*	*26.00*	*9.00*
Exceed SCAQMD Localized Significance Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emissions projections account for a trip generation rate and fleet mix identified by KOA 2019.Specifically, KOA estimates the Project generation of 3,459 average vehicle trips daily, 16.2 percent of which would be medium-heavy duty and heavy-heavy duty trucks. . The average trip length is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

As seen in Table 3.1-10, the emissions of these pollutants on the peak day of operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, **significant impacts would not occur concerning LSTs during operational activities.**

Impact 3.1.1 Conflict with Applicable Air Quality Plan

Threshold:	*Would the Project conflict with or obstruct implementation of any applicable air quality plan?*

2016 Air Quality Management Plan

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the FAAQS and SAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

The Project site is located within the SoCAB, which is under the jurisdiction of the SCAQMD. The SCAQMD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SoCAB is in nonattainment. In order to reduce such emissions, the SCAQMD drafted the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The 2016 AQMP is a regional and multi-agency effort including the SCAQMD, CARB, SCAG, and the USEPA. The plan's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016 RTP/SCS, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.) The Project is subject to the SCAQMD's AQMP.

According to the SCAQMD, in order to determine consistency with SCAQMD's air quality planning two main criteria must be addressed.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) Would the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new air quality violations?

As shown in Table 3.1-9, the Proposed Project would result in emissions exceeding the SCAQMD regional NO_X threshold during operations. As previously discussed, the predominate source of NO_x emissions would be due to mobile sources, mainly that of heavy-duty trucks. Mobile emission cannot be regulated by the City. Therefore, the Proposed Project would have the potential to cause or affect a violation of the ambient air quality standards.

b) Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?

The Project would result in NO_x emissions beyond the SCAQMD regional significance threshold during operations, it could potentially delay the timely attainment of air quality standards and/or AQMP emission reduction.

The Project would not be consistent with Criterion 1.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the SoCAB focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining Project consistency focuses on whether or not the Proposed Project exceeds the assumptions utilized in preparing the forecasts presented its air quality planning documents. Determining whether or not a project exceeds the assumptions reflected in the 2016 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the 2016 AQMP?

A project is consistent with regional air quality planning efforts in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the SCAQMD air quality plans. Generally, three sources of data form the basis for the projections of air pollutant emissions in Irwindale. Specifically, SCAG's *Growth Management* Chapter of the Regional Comprehensive Plan and Guide (RCPG) provides regional population forecasts for the region and SCAG's *2016 RTP/SCS*

provides socioeconomic forecast projections of regional population growth. The City of Irwindale General Plan is referenced by SCAG in order to assist forecasting future growth in Irwindale.

The Proposed Project is consistent with the land use designation and development density presented in the City of Irwindale General Plan. As previously stated, the Project site is designated by the City of Irwindale General Plan as "Industrial/Business Park", which allows for office, manufacturing, and warehouse uses, including commercial manufacturing, light manufacturing and heavy manufacturing. Furthermore, the Project does not involve any uses that would increase population beyond what is considered in the General Plan and, therefore, would not affect city-wide plans for population growth at the Project site. Thus, the Proposed Project is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the General Plan and RCPG. As a result, the Project would not conflict with the land use assumptions or exceed the population or job growth projections used by SCAQMD to develop the 2016 AQMP. The City of Irwindale's population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City; and these are used by SCAG in all phases of implementation and review. Additionally, as the SCAQMD has incorporated these same projections into their air quality planning efforts, it can be concluded that the Proposed Project would be consistent with the projections. (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.) Therefore, the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of SCAQMD's air quality plans. **No impact would occur.**

b) Would the project implement all feasible air quality mitigation measures?

In order to further reduce emissions, the Project would be required to comply with emission reduction measures promulgated by the SCAQMD, such as SCAQMD Rules 402, 403, 1113, and 1403. SCAQMD Rule 402 prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. SCAQMD Rule 403 requires fugitive dust sources to implement Best Available Control Measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. SCAQMD 1113 requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories. Rule 1403 specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings. As such, the Proposed Project meets this consistency criterion. **No impact would occur.**

c) Would the project be consistent with the land use planning strategies set forth by SCAQMD air quality planning efforts?

The AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The Proposed Project is consistent with the land use designation and development density presented in the City of Irwindale's General Plan and therefore would not exceed the population or job growth projections used by the SCAQMD to develop the AQMP.

In conclusion, the determination of AQMP consistency is primarily concerned with the long-term influence of a project on air quality. While the Project would be consistent with Criterion 2, resultant operational emissions would exceed regional significance thresholds potentially hindering the region's ability to meet state and federal air quality standards, thereby conflicting with Criterion 1. Thus, the Project would conflict with the SCAQMD 2016 AQMP.

For the reasons described above, **a significant impact would occur.**

Impact 3.1.2 Exposure to Pollutant Concentrations

Threshold:	*Would the Project expose receptors to substantial pollutant concentrations?*

Toxic Air Contaminants

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; application of architectural coatings; and other miscellaneous activities. For construction activity, DPM is the primary TAC of concern. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC by the CARB in 1998. The potential cancer risk from the inhalation of DPM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. Accordingly, DPM is the focus of this discussion.

Based on the emission modeling conducted the maximum construction-related annual emissions of $PM_{2.5}$ exhaust, considered a surrogate for DPM, would be 2.02 pounds per day during 2020 construction activities and 1.65 during 2021 construction activities (see Attachment A). $PM_{2.5}$ is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter (i.e., $PM_{2.5}$), according to CARB. Most $PM_{2.5}$ derives from combustion, such as use of gasoline and diesel fuels by motor vehicles.) Furthermore, even during the most intense month of construction, emissions of DPM would be generated from different locations on the Project site, rather than a single location, because different types of construction activities

(e.g., demolition, site preparation, building construction) would not occur at the same place at the same time.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the OEHHA, HRAs, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-, 30-, or nine-year exposure period; further, such assessments should be limited to the period/duration of activities associated with the Proposed Project. Consequently, an important consideration is the fact that construction of the Proposed Project is not anticipated to last nine consecutive years, the minimum duration of exposure from which to calculate health risk (Project construction is anticipated to last two years), and that on a day-to-day basis, construction activity generally spans eight hours as opposed to throughout the entire day.

Therefore, considering the relatively low mass of DPM emissions that would be generated during even the most intense season of construction, the fact that construction would not last as long as the minimum duration of exposure from which to calculate health risk, and the relatively short duration that construction activities (less than two years) would occur, construction-related TAC emissions would not expose sensitive receptors to substantial amounts of air toxics.

Furthermore, the Project has been evaluated against the SCAQMD's LSTs for construction. As previously stated, LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative and can be used to assist lead agencies in analyzing localized impacts associated with Project-specific level of proposed projects. The SCAQMD Environmental Justice Enhancement Initiative program seeks to ensure that everyone has the right to equal protection from air pollution. The Environmental Justice Program is divided into three categories, with the LST protocol promulgated under Category I: *Further-Reduced Health Risk.* As shown in Table 3.1-8, the emissions of pollutants on the peak day of construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Thus, the fact that onsite Project construction emissions would be generated at rates below the LSTs for NO_x, CO, PM_{10}, and $PM_{2.5}$ demonstrates that the Project would likely not adversely impact the neighboring community to the east.

Operational Air Contaminants

Operation of the Proposed Project would result in the development of substantial sources of air toxins. The Project includes a warehouse facility that would that would be utilized by heavy- and medium-duty trucks. DPM from trucks idling and accessing the site would be a major source of operational air contaminants. An HRA has been prepared for this Project (see Appendix C). The following discussion is based on this HRA.

Project Health Risk Assessment

CARB identified DPM as a TAC in 1998. Mobile sources (including trucks, buses, automobiles, trains, ships, and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Diesel exhaust is composed of two phases, either gas or particulate – both contribute to the risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particulate phase has many different types that can be classified by size or composition. The sizes of diesel particulates of greatest health concern are fine and ultrafine particles. These particles may be composed of elemental carbon with adsorbed[4] compounds such as organics, sulfates, nitrates, metals, and other trace elements. Diesel exhaust is emitted from a broad range of on- and off-road diesel engines. As the Project would accommodate daily visits from heavy-duty diesel trucks during operations, an analysis of DPM was performed using the USEPA-approved AERMOD model.

Non-Carcinogenic Hazards

The significance thresholds for TAC exposure requires an evaluation of non-cancer risk stated in terms of a hazard index. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the Reference Exposure Level (REL) for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts.

An acute or chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the acute or chronic exposure by the REL. The highest maximum chronic and acute hazard index at a sensitive receptor associated with DPM emissions from the Project would be 0.0013 and 0.0347, respectively. This concentration would occur at the residential neighborhood located east of the Project site, specifically at the western cul-de-sac of Benbow Street. Therefore, non-carcinogenic hazards are calculated to be within acceptable limits.

Carcinogenic Risk

Vehicle DPM emissions were estimated using emission factors for course particulate matter less than 10 microns in diameter (PM_{10}) generated with the 2017 version of the EMission FACtor model (EMFAC) developed by CARB. EMFAC 2017 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources. The most recent version of this model, EMFAC 2017, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled by speed, and number of starts per day. The most important improvement in EMFAC 2017 is the integration of the new data and methods to estimate

[4]This term is specifically used for gases.

emissions from diesel trucks and buses. The model includes the emissions benefits of the truck and bus rule and the previously adopted rules for other on-road diesel equipment.

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2017 for vehicles in the SoCAB within Los Angeles County. EMFAC generates emission factors in terms of grams of pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of vehicle speed, temperature, and relative humidity. The model was run for speeds traveled on and within the vicinity of the Project site. The vehicle travel speeds for each segment modeled are summarized below.

- Idling (15 minutes per truck) – onsite loading/unloading; and
- five miles per hour – onsite vehicle movement including driving and maneuvering; and
- 35 miles per hour – offsite vehicle movement including driving and maneuvering.

The average PM_{10} emission factors for heavy trucks were calculated based on the annual average emission factors for various exposure periods associated with assumptions for evaluating exposure over three different periods (i.e., 70-, 30-, and nine-year exposure scenarios). The posted speed limit on Los Angeles Street is 40 miles per hour. The average PM_{10} emission factor for heavy trucks traveling 35 miles per hour is greater than those traveling 40 miles per hour. Thus, the use of an emissions factor for trucks traveling 35 miles per hour is conservative.

Based on the AERMOD outputs, the expected annual average diesel PM_{10} emission concentrations at the most exposed sensitive receptor (located at the western cul-de-sac of Benbow Street) resulting from operation of the Project (557 daily heavy-duty truck trips) would be 0.007 $\mu g/m^3$ at the greatest.

Cancer risk calculations for residences are based on 70-, 30-, and nine-year exposure periods while schools are based on a nine-year exposure period. The calculated carcinogenic risk at the sensitive receptor as a result of the Project is depicted in Table 3.1-11.

Table 3.1-11. Maximum Operational Health Risk at the Project Vicinity Residential Neighborhoods

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds SCAQMD Significance Threshold?
Residences to the East with Highest Pollutant Concentrations			
70-Year Exposure	3.24	*10*	**No**
30-Year Exposure	2.73	*10*	**No**
9-Year Exposure	1.96	*10*	**No**
Walnut Elementary School to the Northeast			
9-Year Exposure	1.02	*10*	**No**

Source: Refer to Attachment B for Model Data Outputs.
Notes: The elementary school is only analyzed for nine years of exposure as students are not expected to attend school beyond those years.

In conclusion, non-carcinogenic hazards resulting from the Proposed Project are calculated to be within acceptable limits. Additionally, impacts related to cancer risk from heavy trucks would be less than significant at the nearest residences and nearest school. Therefore, impacts related to health risk from the Project would be **less than significant.**

Naturally Occurring Asbestos

Another potential air quality issue associated with construction-related activities is the airborne entrainment of asbestos due to the disturbance of naturally-occurring asbestos-containing soils. The Proposed Project is not located within an area designated by the State of California as likely to contain naturally-occurring asbestos (Department of Conservation [DOC] 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos. Impacts would be **less than significant**.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Project vicinity have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The analysis prepared for CO attainment in the SCAQMD's *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County can be used to demonstrate the potential for CO exceedances. The SCAQMD CO hot spot analysis was conducted for four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The busiest intersection evaluated had a traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the level of service (LOS) in the vicinity of this intersection and found it to be LOS E at peak morning traffic and LOS F at peak afternoon traffic. Even with the inefficient LOS and volume of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992).

According to the Traffic Study prepared for the Project (KOA 2019), the Project is anticipated to generate 3,459 daily trips on average. Because the Proposed Project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, there is no likelihood of the Project traffic exceeding CO values. **No impact would occur.**

For the reasons described above, impacts related to pollutant concentrations exposure would be **less than significant.**

Impact 3.1.3 Odor Emissions

Threshold:	*Would the Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?*

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

According to the SCAQMD, land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified by the SCAQMD as being associated with odors.

For these reasons, **no impact would occur.**

3.1.6 Cumulative Impacts

Impact 3.1.4 Cumulative Increase of Criteria Pollutant for Which the Project Region is Nonattainment

Threshold:	*Would the Project result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard?*

The cumulative setting for air quality includes the City of Irwindale and the SoCAB. The SoCAB is designated as a nonattainment area for state standards of O_3, PM_{10}, and $PM_{2.5}$. The region is also designated as a nonattainment area for federal standards of O_3 and $PM_{2.5}$ (CARB 2018a). Cumulative growth in population, vehicle use, and industrial activity could inhibit efforts to improve regional air quality and attain the ambient air quality standards. Thus, the setting for this cumulative analysis consists of the SoCAB and associated growth and development anticipated in the air basin.

The SCAQMD's approach to assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and CCAAs. As discussed earlier, the Proposed Project would potentially conflict with the 2016 AQMP, which is intended to bring the SoCAB into attainment for all criteria pollutants, since projected daily emissions of NO_x would exceed SCAQMD regional thresholds. On December 12, 2008 the CARB adopted Resolution 08-43, which limits NO_x, PM_{10} and $PM_{2.5}$ emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order (EO) R-09-010 was adopted that codified Resolution 08- 43 into Section 2025, title 13 of the California Code of Regulations (CCR). This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year three-day pass for trucks registered outside of California.

In addition, the SCAQMD recommends that any given project's potential contribution to cumulative impacts be assessed using the same significance criteria as for project-specific impacts. Therefore, individual projects that do not generate operational or construction emissions that exceed the SCAQMD's daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the air basin is in nonattainment, and therefore would not be considered to have a significant, adverse air quality impact. Conversely, individual Project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. As previously noted, the Project would exceed the applicable SCAQMD regional thresholds for operational-source NOx emissions. As such, the **Project would be considered cumulatively considerable in terms of its effect on regional air quality.**

3.1.7 Mitigation Measures

The Proposed Project would result in emissions exceeding the SCAQMD regional NOx threshold during operations. Therefore, the Proposed Project would have the potential to cause or affect a violation of the ambient air quality standards. The Proposed Project has the potential to result in a cumulatively

considerable net increase of a criteria pollutant (NOx) for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

The following air pollutant reduction measures shall be incorporated during Project operations:

AQ-1: Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the City of Irwindale Community Development Department Manager.

- The proposed warehouse shall be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in in anticipation of future technology allowing trucks to operate partially on electricity.
- At least five percent of all vehicle parking spaces shall include rough-in of electrical conduit for future EV charging stations. Further, provisions for future electrical hookups to plug in any onboard auxiliary equipment shall be provided for Project trucks at each dock door location. Electrical panels shall be appropriately sized to allow for future expanded use.
- The majority of all loading/unloading docks and trailer spaces shall be equipped with electrical hookups for trucks with transport refrigeration units (TRUs) or auxiliary power units (APUs). Rough-in of electrical conduits for future hookups shall meet this requirement until a tenant utilizes trucks with TRUs or APUs. Once any tenant utilizing trucks with TRUs or APUs starts to operate, electrical hookups shall be provided.
- Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board (CARB) anti-idling regulations. At a minimum each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than five minutes; and 3) telephone numbers of the building facilities manager and CARB to report violations.
- Locate any check-in points for trucks a minimum of 150 feet inside the Project site to reduce the potential for trucks queuing outside of the facility.
- All dock doors and truck loading spaces shall be located either on the north side or west side of the building in order to encourage truck traffic within the Project site is located away from the eastern property line (the property line closest to sensitive receptors) to the maximum extent possible.
- The Project site is 205 meters (673 feet) from the nearest sensitive receptors at the nearest residences. Establish a buffer zone of at least 300 meters (800 feet) between truck loading zones/docks and the nearest sensitive receptors to the east.

- Restrict overnight parking in the residential communities to the east of the Project. Any lease for the site shall not restrict overnight parking within the Project site where trucks can be stored overnight.
- All service equipment (i.e., forklifts) used within the site shall be electric or compressed natural gas-powered (propane).
- In order to promote alternative fuels, and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants with information related to SCAQMD's Carl Moyer Program, or other such programs that promote truck retrofits or "clean" vehicles and information including, but not limited to, the health effect of diesel particulates, benefits of reduced idling time, CARB regulations, and importance of not parking in residential areas. Tenants shall be notified about the availability of: 1) alternatively fueled cargo handling equipment; 2) grant programs for diesel-fueled vehicle engine retrofit and/or replacement; 3) designated truck parking locations in the project vicinity; 4) access to alternative fueling stations proximate to the site that supply compressed natural gas; and 5) the United States Environmental Protection Agency's SmartWay program.
- There shall be provisions for preferential parking for carpoolers and vanpools.

3.1.8 Level of Significance After Mitigation

Significant and unavoidable Project and cumulative impact from criteria pollutant (NOx) emissions. Impacts associated with potential exposure of sensitive receptors to substantial pollutant concentrations and potential odors affecting a substantial number of people are less than significant. Impacts related to health risk from the Project would be less than significant.

3.2 Cultural Resources

This section considers and evaluates the potential impacts of the proposed Project on historical, cultural, and paleontological resources. Cultural resources are defined as prehistoric and historic sites, structures, and districts or any other physical evidence associated with human activity considered important to a culture, a subculture, or a community for scientific, traditional, or religious reasons.

3.2.1 Introduction

Information in this section is drawn from a Historic Resources Inventory Report (Dudek 2019) for the Project (Appendix D). In accordance with (CEQA) Guidelines Section 15064.5(a)(2)–(3), the subject property was evaluated for eligibility for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and City of Los Angeles Historic-Cultural Monument (HCM) eligibility and integrity requirements. The study involved completion of a California Historical Resources Information System (CHRIS) records search, a pedestrian survey of the proposed Project site, and evaluation of buildings and structures over 45 years of age located on the property for historical significance. The significance evaluation included conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context.

While much of this section includes Native American prehistoric and historic information, Section 3.10 Tribal Cultural Resources of this Draft EIR includes related analysis of the ethnography and significance of the Project area for tribal cultural resources.

3.2.2 Environmental Setting

Historic Context

The following historic context is excerpted from the Historic Inventory Report in Appendix D.

Spanish Period (1769–1822)

Spanish explorers had conducted sailing expeditions along the coast of Southern California as early as the 1500s. Juan Rodríguez Cabrillo stopped in 1542 at present-day San Diego Bay, on an expedition seeking the Northwest Passage. In present-day California, Cabrillo and his crew explored the shorelines of Catalina Island as well as San Pedro and Santa Monica. Much of the present California and Oregon coastline was mapped and recorded by Spanish naval officer Sebastián Vizcaíno from 1602 to 1603. Vizcaino's crew also landed on Catalina Island and at San Pedro and Santa Monica, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabríllo and Vizcaíno. The 1769 expedition by Captain Gaspar de Portolá marked the beginning of California settlement. The official historic period began just after the king of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Portolá and his expedition forces established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California.

In July of 1769, while Portolá was exploring Southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823. Mission San Gabriel Arcángel, in San Gabriel Valley (modern day Alhambra), was established in 1771 as the fourth mission. The original 1771 mission was destroyed in a flash flood and a new mission was built in 1776. El Pueblo de Nuestra Señora la Reina de Los Ángeles, further west, was established in 1781 to support Mission San Gabriel Arcángel. Like many other Spanish occupations, the mission used Spanish military forces to compel the local Tongva population into the mission's service, baptizing them as neophytes and renaming them the Gabrieliños.

The San Gabriel Mission lands that extended from Los Angeles east as far as San Bernardino de Sena Estancia (1810), and the San Bernardino Valley, including present day Irwindale, would have been under Mission San Gabriel Arcángel control (Dudek 2019).

Mexican Period (1822–1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dudek 2019).

Though the subject property itself was not claimed in a land grant, Mexican governors established extensive land grants throughout interior California during the Mexican Period, in part to wrest secular control away from the Spanish Missions and to give land as a reward to soldiers in lieu of pension. North of the subject property, Mexican governor Juan Alvarado awarded Rancho El Susa to Luis Arenas and Rancho Azusa de Duarte to Andres Duarte in 1841. Just three years later, Arenas partitioned and sold Rancho El Susa and Arenas' one-third interest in Rancho San Jose to the east, to Englishman and merchant Henry Dalton, and Dalton renamed his acquired lands Rancho Azusa de Dalton. Rancho de la Puente was awarded to John Rowland in 1842; with its original boundary described as extending to Luis Arenas' lands, but in practice extended no further than present-day Ramona Boulevard/San Bernardino Road. All awarded land grants, however, neglected the region in the floodplain of the San Gabriel River, likely due to its rocky and gravelly terrain, which was useless for cattle raising, orchards, or farming (Dudek 2019).

American Period (1848–Present)

The Mexican-American War from 1846 to 1848 ended with Mexico ceding the Alta California lands to the United States, and the establishment of land ownership via court orders and surveys soon followed. In 1849, Gregorio Fraijo came to California from Sonora, Mexico, likely to participate in the Gold Rush. By the Census of 1850, he was working as an "overseer" somewhere in Los Angeles County. According to the Henry Dalton diaries, Fraijo bought land in Rancho Azusa from Henry Dalton and raised barley. In October 1889, Gregorio Fraijo was issued a land patent on present-day Irwindale Avenue between Arrow Highway and Cypress Avenue. Fraijo and his family settled there, supposedly cultivating corn.

The name "Irwindale" first appeared in newspapers as the name for the community in 1896, in conjunction with advertisements for properties to be located near the Southern Pacific "Irwindale Station." Subsequent mentions are for an Irwindale Land and Water Company operating from the Irwindale Post Office and Irwindale's participation in the Azusa-Covina-Glendora Fruit exchange, which controlled all of the lemons and oranges shipped from Irwindale on the Southern Pacific (Dudek 2019).

After the turn of the 19th century, the introduction of and increasing reliance on the automobile drove the need for new, paved roads in Los Angeles County. New construction methods also relied on concrete as building trends turned towards "skyscrapers" and modernist architecture. As a result, construction aggregate, including gravel, crushed rock, and sand, for concrete and road asphalt was in high demand. High quality aggregate was discovered in the San Gabriel River floodplain; however, early transportation equipment was insufficient for transporting loads of heavy rock more than 20 miles west to Los Angeles. As automobiles became more sophisticated and rail spurs were constructed, transporting the aggregate from the Irwindale area became more feasible.

Aggregate from Irwindale was involved in several major projects as Los Angeles architects began to require concrete for Art Deco decoration and large modernist structures, and nearly every major highway or interstate in Southern California. A great deal of the aggregate was also shipped out of the Port of Los Angeles for use in other national projects. From 1923 to the beginning of the Great Depression two thousand train carloads of rock per month originated from Irwindale, serving six companies: Kincaid's Union Rock Company, Pacific Rock & Gravel Company, Reliance Rock Company, Builders Concrete Rock Company, the Consolidated Rock Company and Vulcan Materials. .

A response to the major Los Angeles floods in 1939, the future of aggregate in San Gabriel River floodplain was changed when the U.S. Army Corps of Engineers began a flood control project, the Santa Fe Dam, in 1941. The dam was completed in 1949, and as a result, more development of the San Gabriel River valley could be safely allowed. More mining companies began to occupy the river basin, creating the 17 large pits for which the area is now known. These include companies such as Vulcan Materials, Hanson Aggregate, CalMat, Vulcan Reliance (Largo), Reliance sand and Gravel Company, Heavy Duty Shop, and Durbin.

The communities around Irwindale were quickly filling out and the post-World War II years brought a population boom to Southern California as veterans settled in suburban Los Angeles. Towns such as west Azusa, West Covina, Duarte, and Baldwin Park threatened to annex Irwindale, which was ideal for aggregate mining due to its unincorporated status. With West Covina and Duarte drafting annexation papers, the City of Irwindale incorporated in 1957, the 56th incorporated city in Los Angeles County.

In 1965, at the current location of the MillerCoors brewery, the San Gabriel Valley Speedway (also called the 605 Speedway) opened. Other car racing venues also operated in the 1960s and 1970s including the Irwindale Raceway (also Irwindale Speedway) at Irwindale Avenue between Foothill Boulevard and Arrow Highway, and the San Gabriel Drag Strip. The Speedway was closed in 1977, and the MillerCoors brewery took over the location for their 220-acre brewery, which began operations in 1980.

The 1990s were characterized by City of Irwindale's efforts to reclaim its abandoned mining pits for development. Beginning in 1990, the City of Irwindale called for filling in inactive mining pits. A report

indicated that over 50% of the city's non-public lands were occupied by mining operations. In 1996, a reclaimed quarry became home to the Toyota Speedway, successor to the Irwindale Raceway a drag racing strip from the 1960s and 1970s. Irwindale Business Center is on 107 acres of reclaimed mining pit, opened in 2001. Large gravel mining operations are still active in Irwindale, however and the city retains many of its original mines (Dudek 2019).

Project Area History

The City of Irwindale has long been an industrial community due to the presence of the existing large-scale mining operations and heavy manufacturing businesses. Contributing to Irwindale's image as an industrial town is the large number of open yard businesses found in the City. The majority of the developable land in the City is zoned M-2, including many of the City's quarry sites and landfills which date back around 100 years.

In 1946, Henry Nagy and Arthur Hintz founded West Allis Concrete Products in West Allis, Wisconsin. In 1953, Nagy purchased the equipment and patents to a precast concrete manufacturing machine called a Hollowcore extruder. The Hollowcore extruder was capable of producing new hollow-core precast concrete product that allowed a manufacturer to produce long spans of unbroken precast concrete slabs, which Nagy named "Spancrete." Nagy's Spancrete product and success inspired several Spancrete franchises across the US.

One such exclusive Spancrete franchise went as Arizona Sand & Rock Company. The Arizona Sand & Rock Company based in Phoenix, founded in 1927, became a subsidiary of California Portland Cement Company in 1960 to manufacture pre-stressed concrete out of Phoenix. In 1963, Arizona Sand & Rock Company won the exclusive franchise for manufacturing Spancrete products. After producing Spancrete in Phoenix for a few years, the Arizona Sand & Rock Company, under Conrock, opened a California Spancrete plant in Irwindale called "Spancrete of California" (Dudek 2019). The site proceeded as Spancrete of California for many years.

From 1967 until 2017, there have been several ownership changes, but the operations have remained the same. In 1999, Hanson Spancrete Pacific purchased the Irwindale Spancrete of California plant, and continued to manufacture hollow core precast concrete until 2010. In 2010, there is a brief period where the owner is listed as Heidelberg Cement group, then Clark Pacific is listed as owner from 2013 to 2017 (Leymaster 2018).

The property has been unoccupied since 2017. The current Project proponent, Duke Realty, approached the City in 2018 with plans for an approximately 528,710 square foot speculative concrete tilt-up building on the site.

Known Cultural Resources in the Area

A goal of the 2019 Dudek report was to determine if cultural resources were present in or adjacent to the Project area and assess the sensitivity of the Project area for undiscovered or buried cultural resources.

The study involved completion of a CHRIS records search, a pedestrian survey of the proposed Project site, and evaluation of buildings and structures over 45 years of age located on the property for historical

significance. The significance evaluation included conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context.

Dudek evaluated the Project site for historical significance and found that it does not appear eligible for inclusion in the NRHP, CRHR, City of Los Angeles HCM, or local register (6Z) due to a lack of significant historical associations and integrity. The buildings and structures on the property are therefore not considered historical resources for the purposes of CEQA. As such, the proposed Project would have no impact on historical built environment resources for the purposes of CEQA.

No archaeological resources were identified within the proposed Project site as a result of the CHRIS records search. No specific archaeological resources or sensitivity concerns were identified by any sources consulted.

3.2.3 Regulatory Setting

Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires that the federal government list significant historic resources on the NRHP, which is the nation's master inventory of known historic resources. The NRHP is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the NRHP as significant historic resources. However, properties under 50 years of age that are of exceptional importance or are contributors to a historic district can also be included in the NRHP. The criteria for listing in the NRHP include resources that:

a) Are associated with events that have made a significant contribution to the broad patterns of history;

b) Are associated with the lives of persons significant in our past;

c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) Have yielded or may likely yield information important in prehistory or history.

State

California Register of Historical Resources (CRHR)

Under CEQA, public agencies must consider the effects of their actions on both historical resources and unique archaeological resources. Pursuant to Public Resources Code (PRC) Section 21084.1, a "project that

may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment." Section 21083.2 requires agencies to determine whether proposed projects would have effects on unique archaeological resources.

Historical resource is a term with a defined statutory meaning (PRC Section 21084.1; determining significant impacts to historical and archaeological resources is described in CEQA Guidelines Section 15064.5[a], [b]). Under CEQA Guidelines Section 15064.5(a), historical resources include the following:

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR (PRC Section 5024.1).
- A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in a historical resource survey meeting the requirements of PRC Section 5024.1(g), will be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource will be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the California Register of Historical Resources (PRC Section 5024.1), including the following:

  a) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
  b) Is associated with the lives of persons important in our past;
  c) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
  d) Has yielded, or may be likely to yield, information important in prehistory or history.

  The fact that a resource is not listed in, or determined to be eligible for listing in the CRHR, not included in a local register of historical resources (pursuant to PRC Section 5020.1(k)), or identified in a historical resources survey (meeting the criteria in PRC Section 5024.1(g)) does not preclude a lead agency from determining that the resource may be an historical resource as defined in PRC Section 5020.1(j) or 5024.1.

Historic resources are usually 45 years old or older and must meet at least one of the criteria for listing in the CRHR, described above (such as association with historical events, important people, or architectural significance), in addition to maintaining a sufficient level of physical integrity.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be historical resources for purposes of CEQA

unless a preponderance of evidence indicates otherwise (PRC Section 5024.1 and California Code of Regulations (CCR), Title 14, Section 4850). Unless a resource listed in a survey has been demolished, lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource to be potentially eligible for the CRHR.

For historic structures, CEQA Guidelines Section 15064.5(b)(3) indicates that a project which follows the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings, or the Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings (1995) is considered as mitigating impacts to a less than significant level.

As noted above, CEQA also requires lead agencies to consider whether projects will impact unique archaeological resources. PRC Section 21083.2(g) states:

> "Unique archaeological resource" means an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> - Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
> - Has a special and particular quality such as being the oldest of its type or the best available example of its type.
> - Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Treatment options under PRC Section 21083.2 include activities that preserve such resources in place in an undisturbed state. Other acceptable methods of mitigation under Section 21083.2 include excavation and curation or study in place without excavation and curation (if the study finds that the artifacts would not meet one or more of the criteria for defining a unique archaeological resource).

Section 7050.5(b) of the California Health and Safety Code specifies protocol when human remains are discovered, as follows:

> *In the event of discovery or recognition of any human remains in any location other than a dedicated cemetery, there shall be no further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains until the coroner of the county in which the human remains are discovered has determined, in accordance with Chapter 10 (commencing with Section 27460) of Part 3 of Division 2 of Title 3 of the Government Code, that the remains are not subject to the provisions of Section 27492 of the Government Code or any other related provisions of law concerning investigation of the circumstances, manner and cause of death, and the recommendations concerning treatment and disposition of the human remains have been made to the person responsible for the excavation, or to his or her authorized representative, in the manner provided in Section 5097.98 of the Public Resources Code.*

CEQA Guidelines Section 15064.5(e) requires that excavation activities stop whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner

determines that the remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

In addition to the mitigation provisions pertaining to accidental discovery of human remains, the CEQA Guidelines also require that a lead agency make provisions for the accidental discovery of historical or archaeological resources, generally. Pursuant to Section 15064.5(f), these provisions should include "an immediate evaluation of the find by a qualified archaeologist. If the find is determined to be an historical or unique archaeological resource, contingency funding and a time allotment sufficient to allow for implementation of avoidance measures or appropriate mitigation should be available. Work could continue on other parts of the building site while historical or unique archaeological resource mitigation takes place."

Paleontological resources are classified as nonrenewable scientific resources. PRC Section 5097.5 et seq. makes it a misdemeanor for anyone to knowingly disturb any archaeological, paleontological, or historical features situated on public lands. No state or local agencies have specific jurisdiction over paleontological resources. No state or local agency requires a paleontological collecting permit to allow for the recovery of fossil remains discovered as a result of construction-related earth-moving on state or private land on a project site.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Health and Safety Code Section 7050.5b). PRC Section 5097.98 outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5c). The NAHC would notify the most likely descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

City of Irwindale Resolution 2009-60-2418

In 2009, the City of Irwindale Council members adopted a resolution establishing a local official register of historic resources and adopting two resources to be immediately placed on the local register. Section 3 of *Resolution No. 2009-60-2418: A Resolution of the City Council of the City of Irwindale to Establish a Local Official Register of Historic resources and to Include Our Lady of Guadalupe Catholic Mission, located at*

16233 Arrow Highway (APN 8619-012-909), and El Divino Salvador Presbyterian Church, Located at 5116 Irwindale Avenue (APN 8417-029-008) On Said Register elaborates on the adopted policies to establish a local official register of historic places:

> Criteria for Listing on the Official Register of Historic Resources. A building or structure shall be designated a historic building if the City Council finds one or more conditions (including but not limited to the following) exist with reference to such building or structure:
>
> A. The building or structure proposed for designation is particularly representative of a distinct historical period, type, style, region or way of life.
> B. The building or structure was connected with someone renowned, important, or a local personality.
> C. The building or structure is connected with a business or use which was once common but is now rare.
> D. The building or structure represents the work of a master builder, engineer, designer, and artist or architect whose individual genius influenced his/ her age.
> E. The building or structure is the site of an important historic event or is associated with events that have made a meaningful contribution to the nation, state or city.
> F. The building or structure exemplifies a particular architectural style.
> G. The building or structure exemplifies the best remaining architectural type of a neighborhood.
> H. The construction materials or engineering methods used in the building or structure embody elements of outstanding attention to architectural or engineering design, detail, material or craftsmanship.

City of Irwindale General Plan

Programs within the Resources Management Element relevant to cultural/historic resources include the following:

> Cultural Awareness. A cornerstone of this program will be the identification of a site/location that may be used for the storage and collection of artifacts, photographs, books, and displays. The City will cooperate with local organizations (such as the local historical society, Chamber of Commerce, etc.) and individuals to acquire resource materials concerning local history and culture. These materials include books, photographs, artifacts, furniture, etc., that may be displayed in a future City museum. The City will continue to support cultural resource conservation and preservation efforts in Irwindale.
>
> Cultural Resource Management. Should archaeological or paleontological resources be encountered during excavation and grading activities, all work would cease until appropriate salvage measures are established. Appendix K of the CEQA Guidelines shall be followed for excavation monitoring and salvage work that may be necessary. Salvage and preservation efforts will be undertaken pursuant to Appendix K requirements outlined in CEQA.
>
> Design Guidelines and Review. The City shall continue to implement its current design review procedures. The purpose of the design review process is to ensure that building design, architecture, and site layouts are compatible with surrounding development and consistent with the Commercial and Industrial Development Design Guidelines. The design review process is an

important component of development review. This process may be used to consider a potential development's impact on the architectural integrity of historically significant structures and sites.

Environmental Review. The City shall continue to evaluate the environmental impacts of new development and identify applicable mitigation measures prior to development approval, as required by the CEQA. Environmental review shall be provided for those projects that will have a potential to adversely affect the environment. Issue areas that will be addressed in the environmental analysis related to resource issues include: air quality, water and hydrology, plant life, animal life, natural resources, energy, aesthetics, recreation, and cultural resources. In compliance with CEQA, the City shall also assign responsibilities for the verification of the implementation of any mitigation measures.

Historic Building Code. The City will investigate the feasibility of adopting alternate building code standards for historic structures, as authorized by the State Historical Building Code. The initial step will require City staff to amend the development code to include provisions for the maintenance, rehabilitation, and preservation of historic structures. Potential candidates include those historic resources described herein.

3.2.4 Impact Analysis

California Environmental Quality Act (CEQA) Guidelines Appendix G states that a project may have a significant effect on cultural resources if any of the following would occur:

1. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

2. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

3. Would the project disturb any human remains, including those interred outside of formal cemeteries?

Impact 3.2.1: Potential for Impacts to Historical Resources

Threshold:	*Would the project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?*

As a result of the background research, field survey, and property significance evaluations, buildings at the proposed Project site were evaluated and found not eligible for the NRHP, CRHR, or as a City of Irwindale Historic Resource, due to a lack of significant historical associations, architectural merit, and compromised integrity. Archival research did not identify direct associations between the current subject property and events that have made a significant contribution to the broad patterns of local or regional history. There are no known associations with any important figures in national, state, or local history. The buildings at the Project site do not possess high artistic value, and archival research did not indicate that they might be part of a significant or distinguishable entity that may lack individual distinction. The Project site is not eligible as a contributor to any existing historic district. There is no evidence to suggest that the Project site has the potential to yield information important to national, state, or local history, nor is it associated with a known archaeological resource (Dudek 2019).

For these reasons, **no impact would occur.**

Impact 3.2.2: Potential for Impacts to Archaeological Resources

Threshold:	*Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?*

No archaeological resources or sensitivity concerns were identified within the Project site as a result of the CHRIS records search and other records sources. However, it is possible that intact archaeological deposits are present at subsurface levels. AB 52 consultation with the Gabriel Band of Mission Indians—Kizh Nation has indicated the project site is located within the ancestral territory of the Gabrieleno. The project site's proximity to the San Gabriel River and associated traditional Native American trade routes makes it sensitive for archaeological resources and the potential for discovery of buried cultural resources in native soils at the site. Thus, significant impacts may occur from the discovery of unknown resources during ground disturbing activities from Project construction. Implementation of mitigation measure **CUL-1** would include an opportunity for tribal participation in monitoring of subsurface excavations.

For these reasons, impacts to unknown archaeological resources would be **less than significant with mitigation.**

Impact 3.2.3: Potential for Impacts to Human Remains

Threshold:	*Would the project disturb any human remains, including those interred outside of formal cemeteries?*

No human remains or dedicated cemeteries were identified during the background research, field survey, and property significance evaluation. However, compliance with California Health and Safety Code Section 7050.5 governing the discovery, notification, disposition and treatment of discovered human remains and related grave goods will be adhered to during Project construction. The discovery of human remains would require handling in accordance with PRC 5097.98, which states that in the event that human remains are discovered during construction, construction activity shall be halted and the area shall be protected until consultation and treatment can occur as prescribed by law. In the unexpected event that human remains are unearthed during construction activities, impacts would be potentially significant, and as such, implementation of mitigation measure **CUL-2** is required.

For these reasons, impacts would be **less than significant with mitigation.**

3.2.5 Cumulative Impacts

It is possible that unknown human remains, archaeological, historical, tribal cultural, and/or paleontological resources could be discovered during earthmoving or grading in the Project area. However, mitigation measures associated with monitoring during project-related earthmoving and grading would reduce any project related incremental contribution to possible cumulative impacts to less than significant. Moreover, it can be anticipated that agencies with jurisdiction over related area projects

would impose mitigation measures similar to those imposed on the proposed Project. As such, cumulative impacts to cultural resources would be **less than significant with mitigation.**

3.2.6 Mitigation Measures

CUL-1: Archaeological Monitoring and Accidental Discovery. Prior to issuance of grading permits, the Applicant shall retain a qualified archaeological monitor and, if interested pending conclusion of the tribal resources consultation, a Native American monitor. Monitoring by a qualified archaeologist should be conducted under the supervision of a Los Angeles County Certified archaeologist and, if interested, by a Native American monitor from one of the Gabrieleno groups recognized by the Native American Heritage Commission (NAHC). The monitor shall be present on the Project site during ground-disturbing activities to monitor rough and finish grading, excavation, and other ground-disturbing activities in any native soils (i.e. non-previously engineered soils). Because no cultural resources were identified on the Project site, archaeological monitors are not required to be present on a full-time basis but shall spot check ground-disturbing activities to ensure that no cultural resources are impacted during construction activities. The precise timing of monitoring activities shall be consistent with the provisions established in the Monitoring Plan.

The Monitoring Plan shall be prepared by a qualified archaeologist and shall be reviewed by the Community Development Manager/City Planner, or designee. The Monitoring Plan should include at a minimum: (1) a list of personnel involved in the monitoring activities; (2) a description of how the monitoring shall occur; (3) a description of the frequency of monitoring (e.g., full-time, part-time, spot checking); (4) a description of what resources may be encountered; (5) a description of circumstances that would result in the halting of work at the project site (e.g., what is considered a "significant" archaeological site); (6) a description of procedures for halting work on site and notification procedures; and (7) a description of monitoring reporting procedures. If any significant historical resources, archaeological resources, tribal cultural resources, or human remains are found during monitoring, work shall be stopped within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist. If the deposits are culturally significant, adverse effects on the deposits must be avoided, or such effects must be mitigated. Mitigation can include, but is not necessarily limited to: leaving the deposits in place, excavation of the deposit in accordance with a data recovery plan (see CCR Title 4(3) Section 5126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; production of a report detailing the methods, findings, and significance of the archaeological site and associated materials; curation of archaeological materials at an appropriate facility for future research and/or display; and an interpretive display of recovered archaeological materials at a local school, museum, or library.

Upon completion of all monitoring/mitigation activities, the consulting archaeologist shall submit a monitoring report to the Community Development Manager/City Planner, or designee, and to the South-Central Coastal Information Center summarizing all

monitoring/mitigation activities and confirming that all recommended mitigation measures have been met.

CUL-2: Human Remains. If human remains of any kind are found during construction, the requirements of CEQA Guidelines Section 15064.5(e) and Assembly Bill 2641 shall be followed. According to these requirements, all construction activities must cease immediately, and the Los Angeles County Coroner and a qualified archaeologist must be notified. The Coroner will examine the remains and determine the next appropriate action based on his or her findings. If the coroner determines the remains to be of Native American origin, he or she will notify the NAHC. The NAHC will then identify the MLD to be consulted regarding treatment and/or reburial of the remains. If an MLD cannot be identified, or the MLD fails to make a recommendation regarding the treatment of the remains within 48 hours after gaining access to them, the Native American human remains and associated grave goods shall be buried with appropriate dignity on the property in a location not subject to further subsurface disturbance.

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3.3 Energy

This section describes the environmental setting for energy, including the regulatory setting and existing site conditions, the impacts on energy that would result from the proposed Project, and the mitigation measures that would reduce these impacts.

3.3.1 Introduction

Energy consumption is analyzed due to the potential direct and indirect environmental impacts associated with the proposed Project. Such impacts include the depletion of nonrenewable resources (electricity, natural gas, and equipment and automotive fuel) and emissions of pollutants during both Project construction and long-term operation.

3.3.2 Environmental Setting

To better integrate the energy analysis with the rest of the California Environmental Quality Act (CEQA), the Governor's Office of Planning Research has added relevant questions regarding potential energy impacts currently contained in CEQA Guidelines Appendix F to the sample environmental checklist in Appendix G, holding that CEQA-related environmental analysis must quantify energy use during construction and operations, including energy associated with transportation associated with the Project, and also consider the availability of measures to reduce reliance on fossil fuels.

3.3.2.1 Electricity/Natural Gas Services

Southern California Edison (SCE) provides electrical services to Irwindale through State-regulated public utility contracts. SCE, the largest subsidiary of Edison International, is the primary electricity supply company for much of Southern California. It provides 14 million people with electricity across a service territory of approximately 50,000 square miles. SCE has met or exceeded all Renewable Portfolio Standard requirements to date, procuring renewable energy from diverse sources, including biomass, biowaste, geothermal, hydroelectric, solar, and wind. This Standard requires all California utilities to generate 33 percent of their electricity from renewables by 2020, 50 percent of their electricity from renewables by 2030, and 100 percent by 2045 (SCE 2014).

The Southern California Gas Company (SoCalGas) provides natural gas services to the Project area. As the nation's largest natural gas distribution utility, SoCalGas delivers natural gas energy to 21.6 million consumers through 5.9 million meters in more than 500 communities. SoCalGas's service territory encompasses approximately 20,000 square miles throughout Central and Southern California, from Visalia to the Mexican border (SoCalGas 2019).

3.3.2.2 Energy Consumption

Electricity use is measured in kilowatt-hours (kWh), and natural gas use is measured in therms. Vehicle fuel use is typically measured in gallons (e.g. of gasoline or diesel fuel), although energy use for electric vehicles is measured in kWh.

The electricity consumption associated with all non-residential uses in Los Angeles County from 2014 to 2018 is shown in Table 3.3-1. As indicated, the demand has decreased since 2014.

Table 3.3-1. Non-Residential Electricity Consumption in Los Angeles County 2014-2018

Year	Non-Residential Electricity Consumption (kilowatt hours)
2018	47,267,108,138
2017	48,089,687,858
2016	48,759,916,535
2015	49,692,361,721
2014	49,193,414,622

Source: California Energy Consumption Data Management System (ECDMS) 2019.

The natural gas consumption associated with all non-residential uses in Los Angeles County from 2014 to 2018 is shown in Table 3.3-2. As indicated, the demand has increased since 2014.

Table 3.3-2. Non-Residential Natural Gas Consumption in Los Angeles County 2014-2018

Year	Non-Residential Natural Gas Consumption (therms)
2018	1,813,661,643
2017	1,840,593,319
2016	1,767,522,497
2015	1,677,088,197
2014	1,715,328,124

Source: ECDMS 2019

Automotive fuel consumption in Los Angeles County from 2015 to 2019 is shown in Table 3.3-3. On-road fuel consumption has decreased between 2015 and 2019, whereas off-road fuel consumption increased in that same time period. For this Project, due to the operational use of diesel heavy-duty trucks, construction fuel use and operational fuel use will be compared to the total fuel consumption in the County.

Table 3.3-3. Automotive Fuel Consumption in Los Angeles County 2015-2019

Year	On-Road Automotive Fuel Consumption (gallons)	Off-Road Equipment Fuel Consumption (gallons)	Total Fuel Consumption (gallons)
2019	4,358,843,709	91,019,018	4,449,862,727
2018	4,447,799,085	88,768,074	4,536,567,159
2017	4,520,489,085	86,429,167	4,606,918,252
2016	4,542,402,544	84,163,500	4,626,566,044

Table 3.3-3. Automotive Fuel Consumption in Los Angeles County 2015-2019

Year	On-Road Automotive Fuel Consumption (gallons)	Off-Road Equipment Fuel Consumption (gallons)	Total Fuel Consumption (gallons)
2015	4,532,265,457	81,060,444	4,613,325,901

Source: California Air Resources Board (CARB) 2014.

3.3.3 Regulatory Setting

California Energy Efficiency Standards for Residential & Nonresidential Buildings (Title 24)

Title 24, California's energy efficiency standards for residential and nonresidential buildings, were established by the California Energy Commission (CEC) in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. California's energy efficiency standards are updated on an approximate three-year cycle. In 2016, the CEC updated Nonresidential Title 24 standards with more stringent requirements. The 2016 standards, which went into effect on January 1, 2017, have substantially reduced the growth in electricity and natural gas use. In December 2018, the CEC released updated standards for 2019 (CEC 2018).

California Green Building Standards

The California Green Building Standards Code (California Code of Regulations, Title 24, Part 11), commonly referred to as the CALGreen Code, is a statewide mandatory construction code that was developed and adopted by the California Building Standards Commission and the California Department of Housing and Community Development. The CALGreen standards require new residential and commercial buildings to comply with mandatory measures under the topics of planning and design, energy efficiency, water efficiency and conservation, material conservation and resource efficiency, and environmental quality. CALGreen also has voluntary tiers and measures that local governments may adopt that encourage or require additional measures in the five green building topics. The most recent update to the CALGreen Code was adopted in 2019. Part 1, the California Administrative Code was effective as of January 2019, whereas parts 2 through 5 and 11 through 12 will become effective on January 1, 2020. The update primarily aims to provide greater clarity and consistency (Division of the State Architect [DSA] 2019).

Senate Bill 1368

On September 29, 2006, Governor Arnold Schwarzenegger signed into law Senate Bill (SB) 1368 (Perata, Chapter 598, Statutes of 2006). The law limits long-term investments in baseload generation by the State's utilities to those power plants that meet an Emissions Performance Standard (EPS) jointly established by the CEC and the California Public Utilities Commission (CPUC).

The CEC has designed regulations that:

- Establish a standard for baseload generation owned by or under long-term contract to publicly owned utilities, of 1,100 pounds carbon dioxide per megawatt hour. This would encourage the development of power plants that meet California's growing energy needs while minimizing their emissions of greenhouse gas;
- Require posting of notices of public deliberations by publicly owned utilities on long-term investments on the CEC website. This would facilitate public awareness of utility efforts to meet customer needs for energy over the long term while meeting the State's standards for environmental impact; and
- Establish a public process for determining the compliance of proposed investments with the EPS (Perata, Chapter 598, Statutes of 2006).

Renewable Energy Sources (Renewables Portfolio Standard)

Established in 2002 under SB 1078, and accelerated by SB 107 (2006) and SB 2 (2011), California's Renewables Portfolio Standard (RPS) obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent of their electricity from renewable energy sources by 2020. Eligible renewable resources are defined in the 2013 RPS to include biodiesel; biomass; hydroelectric and small hydro (30 megawatts or less); Los Angeles Aqueduct hydro power plants; digester gas; fuel cells; geothermal, landfill gas; municipal solid waste; ocean thermal, ocean wave, and tidal current technologies; renewable derived biogas; multi-fuel facilities using renewable fuels; solar photovoltaic; solar thermal electric; wind; and other renewables that may be defined later. Governor Jerry Brown signed SB 350 on October 7, 2015, which expands the RPS by establishing a goal of 60 percent of the total electricity sold to retail customers in California per year by December 31, 2030. In addition, SB 350 includes the goal to double the energy efficiency savings in electricity and natural gas final end uses (such as heating, cooling, lighting, or class of energy uses upon which an energy efficiency program is focused) of retail customers through energy conservation and efficiency. The bill also requires the CPUC, in consultation with the CEC, to establish efficiency targets for electrical and gas corporations consistent with this goal. SB 350 also provides for the transformation of the California Independent System Operator (ISO) into a regional organization to promote the development of regional electricity transmission markets in the western states and to improve the access of consumers served by the California ISO to those markets, pursuant to a specified process.

3.3.4 Impact Analysis

3.3.4.1 Thresholds of Significance

CEQA Guidelines Appendix G states that a project may have a significant effect on the environment if any of the following would occur:

1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact 3.3.1: Wasteful, Inefficient, or Unnecessary Consumption of Energy

Threshold:	*Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?*

The impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity, natural gas, the equipment-fuel necessary for Project construction and fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. For the purpose of this analysis, the amount of electricity and natural gas estimated to be consumed by the Project is quantified and compared to that consumed by non-residential land uses in Los Angeles County. Similarly, the amount of fuel necessary for Project construction and operations is calculated and compared to that consumed in Los Angeles County.

The analysis of electricity/gas usage is based on California Emissions Estimator Model (CalEEMod) modeling conducted by ECORP Consulting (see Appendix A), which quantifies energy use for Project operations. The amount of operational automotive fuel use was estimated using CARB's EMFAC2014 computer program, which provides projections for typical daily fuel usage in Los Angeles County. The amount of total construction-related fuel use was estimated using ratios provided in the Climate Registry's General Reporting Protocol for the Voluntary Reporting Program, Version 2.1. Energy consumption associated with the construction and operations of the Proposed Project is summarized in Table 3.3-4.

Table 3.3-4. Proposed Project Energy and Fuel Consumption

Energy Type	Annual Energy Consumption	Percentage Increase Countywide
Electricity Consumption[1]	5,868,680 kilowatt-hours	0.012 percent
Natural Gas[1]	95,696 therms	0.005 percent
Automotive Fuel Consumption		
Project Construction[2]	122,069 gallons	0.002 percent
Project Operations[3]	417,189 gallons	0.009 percent

Source: [1]ECORP 2019; [2]Climate Registry 2016; [3]EMFAC2014 (CARB 2014)
Notes: The Project increases in electricity and natural gas consumption are compared with all of the non-residential buildings in Los Angeles County in 2018, the latest data available. The Project increases in automotive fuel consumption are compared with the countywide fuel consumption in 2019.

As shown in Table 3.3-4, the increase in electricity usage as a result of the Project would constitute an approximate 0.012 percent increase in the typical annual electricity consumption attributable to non-residential uses in Los Angeles County. Project increases in natural gas usage across Los Angeles County would also be negligible at 0.005 percent. The Project would adhere to all federal, State, and local requirements for energy efficiency, including the Title 24 standards. The Project would be required to

comply with Title 24 building energy efficiency standards, which establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy usage.

As further indicated in Table 3.3-4, the Project's gasoline fuel consumption during the one-time construction period is estimated to be 122,069 gallons of fuel, which would increase the annual construction-related gasoline fuel use in the county by 0.002 percent. As such, Project construction would have a nominal effect on local and regional energy supplies. No unusual Project characteristics would necessitate the use of construction equipment that would be less energy efficient than at comparable construction sites in the region or the state. Construction contractors would purchase their own gasoline and diesel fuel from local suppliers and would judiciously use fuel supplies to minimize costs due to waste and subsequently maximize profits. Additionally, construction equipment fleet turnover and increasingly stringent State and federal regulations on engine efficiency combined with State regulations limiting engine idling times and requiring recycling of construction debris, would further reduce the amount of transportation fuel demand during Project construction. For these reasons, it is expected that construction fuel consumption associated with the Project would not be any more inefficient, wasteful, or unnecessary than other similar development projects of this nature.

As indicated in Table 3.3-4, Project operation is estimated to consume approximately 417,189 gallons of automotive fuel per year, which would increase the annual countywide automotive fuel consumption by 0.009 percent. The amount of operational fuel use was estimated using CARB's EMFAC2014 computer program, which provides projections for typical daily fuel usage in Los Angeles County. This analysis conservatively assumes that all of the automobile trips projected to arrive at the Project during operations would be new to Los Angeles County. Further, a liberal approach was taken for vehicle trip estimation to ensure potential impacts due to operational gasoline usage were adequately accounted for. The Project would not result in excessive long-term operational automotive fuel consumption. Fuel consumption associated with vehicle trips generated by the Project would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. Furthermore, the Project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

For these reasons, this impact would be **less than significant.**

Impact 3.3.2: Conflict with State or Local Plans

Threshold:	*Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?*

The Project would be designed in a manner that is consistent with relevant energy conservation plans designed to encourage development that results in the efficient use of energy resources. Relevant energy conservation plans specific to Irwindale include the City's General Plan Implementation Element, specifically the Energy Conservation and Building Code Review Program. An overarching goal of these implementation elements is to encourage energy conservation activities and programs throughout the

City. The Project would not conflict or obstruct any local or state plans for renewable energy or energy efficiency.

For these reasons, this impact would be **less than significant.**

3.3.5 Cumulative Impacts

The proposed Project, when considered in combination with existing, approved, proposed, and reasonably foreseeable development in the region, would increase the annual construction-related gasoline fuel use in the county by 0.002 percent and would increase the annual countywide automotive fuel consumption by 0.009 percent. However, as discussed in Impacts 3.3.1 and 3.3.2, the Project's fuel consumption associated with vehicle trips would not be considered inefficient, wasteful, or unnecessary in comparison to other similar developments in the region. Additionally, because utilities have procedures to plan for system improvements to keep pace with projected regional demand, the Project would not contribute to a significant cumulative impact related to energy efficiency and consumption. Cumulative impacts would be **less than significant.**

3.3.6 Mitigation Measures

No significant impacts were identified, and no mitigation measures are required.

3.3.7 Level of Significance After Mitigation

Less than significant impact.

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3.4 Greenhouse Gas Emissions

3.4.1 Introduction

This section documents the results of a greenhouse gas (GHG) emissions assessment in the combined Air Quality & Greenhouse Gas Assessment report completed by ECORP for the 13131 Los Angeles Street Industrial Project (Project) in Irwindale, California (Appendix B). GHG-related impacts were assessed in accordance with methodologies recommended by CARB and the SCAQMD, as well as in consideration of the NOP comment letters received from both the SCAQMD and CARB as presented in Appendix A.

3.4.2 Environmental Setting

Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3.4-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents ($CO2_2e$), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect

and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3.4-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1]USEPA 2016a, [2] USEPA 2016b, [3] USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

Sources of Greenhouse Gas Emissions

In July 2018, CARB released the 2018 edition of the California GHG inventory covering calendar year 2016 emissions. In 2016, California emitted 429.4 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of

California's GHG emissions in 2016, accounting for approximately 41 percent of total GHG emissions in the state. This sector was followed by the industrial sector (23 percent) and the electric power sector including both in- and out-of-state sources (16 percent) (CARB 2018b).

Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

3.4.3 Regulatory Setting

State

Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

While dated, this EO remains relevant because a more recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) 231 Cal.App.4th 1056, examined whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. While the California Supreme Court ruled that the San Diego Association of Governments did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal, the decision also recognized that the goal of a 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emissions 80 percent below 1990 levels by the year 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. CARB has identified a GHG reduction target of 15 percent from current levels for local governments and notes that successful implementation relies on local governments' land use planning and urban growth decisions.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which was re-approved by CARB on August 24, 2011, that outlines measures to meet the 2020 GHG reduction goals. To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels. The Scoping Plan recommends measures for further study and possible state implementation, such as new fuel regulations. It estimates that a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, and forestry sectors and other sources could be achieved should the State implement all of the measures in the Scoping Plan.

The Scoping Plan is required by AB 32 to be updated at least every five years. The first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB. The 2017 Scoping Plan Update was adopted on December 14, 2017. The Scoping Plan Update addresses the 2030 target established by SB 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include: increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Executive Order 8-30-15

On April 20, 2015 Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2˚C, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

In October 2015, SB 350 was signed by Governor Edmund (Jerry) Brown, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from renewable resources by 2030. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

Local

South Coast Air Quality Management District

To provide guidance to local lead agencies on determining significance for GHG emissions in CEQA documents, SCAQMD staff is convening an ongoing GHG CEQA Significance Threshold Working Group. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that provide input to SCAQMD staff on developing the significance thresholds. On October 8, 2008, the SCAQMD released the *Draft AQMD Staff CEQA GHG Significance Thresholds*. These thresholds have not been finalized and continue to be developed through the working group.

The SCAQMD has not announced when staff is expecting to present a finalized version of its GHG thresholds to the governing board. On September 28, 2010, the SCAQMD recommended a numeric "bright-line" threshold of 10,000 metric tons per year of CO_2e for industrial land use projects. This threshold was developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. This working group was formed to assist SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State Office of Planning and Research (OPR), CARB, the Attorney General's Office, a variety of city and county planning departments in the

, various utilities such as sanitation and power companies throughout the SoCAB, industry groups, and environmental and professional organizations. The numeric "bright line" was developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provides guidance to CEQA practitioners with regard to determining whether GHG emissions from a proposed industrial land use project are significant.

Southern California Association of Governments

On April 7, 2016, the SCAG Regional Council adopted the *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy* (2016 RTP/SCS). The 2016 RTP/SCS charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The SCAG region strives toward sustainability through integrated land use and transportation planning. The SCAG region must achieve specific federal air quality standards and is required by State law to lower regional GHG emissions.

3.4.4 Impact Analysis

3.4.4.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to greenhouse gas emissions if it would:

1) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or,

2) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

SCAQMD Thresholds

On September 28, 2010, the SCAQMD recommended a numeric, bright-line threshold of 10,000 metric tons of CO_2e annually for industrial land uses. This threshold was developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. The working group was formed to assist the SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State OPR, CARB, the Attorney General's Office, a variety of city and county planning departments in the SoCAB, various utilities such as sanitation and power companies throughout the basin, industry groups, and environmental and professional organizations. SCAQMD thresholds were developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provide guidance to CEQA practitioners and lead agencies with regard to determining whether GHG emissions from a proposed project are significant.

For the purposes of this evaluation, the Proposed Project will first be compared to the SCAQMD numeric bright-line threshold of 10,000 metric tons of CO_2e annually for industrial project. The Project is also evaluated for compliance with SCAG's 2016–2040 RTP/SCS, which establishes an overall GHG target for the Project region consistent with both the target date of AB 32 (2020) and the post-2020 GHG reduction goals of SB 32.

3.4.4.2 Methodology

GHG-related impacts were assessed in accordance with methodologies recommended by CARB and the SCAQMD, as well as in consideration of the NOP comment letters received from both the SCAQMD and CARB as presented in Appendix A. Where GHG emission quantification was required, emissions were modeled using the CalEEMod, version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction-generated GHG emissions were primarily calculated using CalEEMod model defaults for Los Angeles County. Operational GHG emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA (2019). It is noted that the SCAQMD NOP comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 sf of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is conservatively based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA.

3.4.4.3 Project Impact Analysis

Impact 3.4.1 Contribution of Greenhouse Gas Emissions

Threshold:	*Would the Project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?*

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3.4-2 illustrates the specific construction-generated GHG emissions that would result from construction of the Project.

Table 3.4-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Construction in 2020	694
Construction in 2021	1,239
Total	**1,933**

Source: CalEEMod version 2016.3.2. Refer to Attachment C for Model Data Outputs.
Notes: Emissions estimates account for the site prep and grading of 24.88 acres along with the demolition of 62,500 sf of buildings.

As shown in Table 3.4-2, Project construction would result in the generation of approximately 1,933 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. The amortized construction emissions are added to the annual average operational emissions.

Operations

Operation of the Project would result in GHG emissions predominantly associated with motor vehicle use. Long-term operational GHG emissions attributable to the Project are identified in Table 3.4-3 and compared to SCAQMD's interim screening level numeric bright-line threshold of 10,000 metric tons of CO_2e annually. As previously described, operational GHG emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA (2019). As previously described, the SCAQMD NOP comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 sf of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is conservatively based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA. Consistent with SCAQMD recommendations, in order to more accurately account for the trip distribution patterns of freight trucks, the average trip length is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long

Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

Table 3.4-3. Operational-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Construction Emissions (amortized over the 30-year life of the Project)	64
Area Source Emissions	0
Energy Source Emissions	1,882
Mobile Source Emissions	34,493
Solid Waste Emissions	472
Water Emissions	98
Total Emissions	**37,009**

Source: CalEEMod version 2016.3.2. Refer to Attachment C for Model Data Outputs.

As shown in Table 3.4-3, operational-generated emissions would exceed the SCAQMD's numeric bright-line threshold of 10,000 metric tons of CO_2e annually. A large majority of these emissions would be generated by mobile sources, which is an emission source that cannot be regulated by the City of Irwindale. Additionally, GHG are global pollutants. They can be carried miles away from the original source and have long atmospheric lifetimes compared to that of local pollutants. GHG Emissions do not directly pose a threat to human health but can have numerous indirect effects. As previously stated, GHG emissions have been directly correlate to climate change. This can lead to events such as droughts, heat waves, increased intensity in storm events and rising sea levels. These can result in decrease precipitation, increased wildfires, saltwater infiltration of groundwater tables and decreased crop yields. A reduction of vehicle trips to and from the Proposed Project site would reduce the amount of mobile emissions. Methods of reducing vehicle trips include carpooling, transit, cycling, and pedestrian connections. However, this Project is proposing an industrial warehouse and the reduction of vehicle trips is only feasible for the employees working in the facility, though the majority of traffic trips instigated by the Project would be related to haul truck trips transporting freight.

As stated above, the State of California, along with the SCAQMD, has implemented numerous strategies pertaining to trucks and the reduction of emissions that directly apply to the Project. Urban goods delivery is an essential component of the greater freight system and vital to the urban economy. While urban goods delivery represents a small share of urban traffic, it generates a disproportionate amount of GHG emissions. The State of California promulgates policies designed and implemented to improve the efficiency and environmental footprint of the urban freight system, including the introduction of zero and near-zero emission vehicles—a strategy embedded in the Governor's Sustainable Freight Action Plan as well as CARB's AB 32 Scoping Plan, Statewide Implementation Plan, and Mobile Source Strategy.

Additionally, the Project is proposing an industrial warehouse use in close proximity to the I-605, I-10, and I-210, which are major regional freeway corridors. Further, the I-10 corridor has been identified as a "Major International Trade Highway Route" in the California State Goods Movement Action Plan (2007)

and therefore serves to accommodate existing truck trips along the interstate. The Goods Movement Action Plan is a Statewide initiative to improve and expand California's goods movement industry and infrastructure in a manner which will increase mobility and relieve traffic congestion as well as reduce GHG emissions. The Plan further identifies I-10 (located 2.2 miles south of the Project site and linked to the Project site by the I-605) as a "Priority Corridor" for development towards more efficient goods movement and anticipates that the development of good movement-supporting facilities, such as industrial warehouses like that proposed by the Project, will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related GHG emissions.

Furthermore, both CARB and the SCAQMD have prepared NOP letters concerning the Proposed Project that contain several mitigation measure recommendations to reduce Project GHG emissions generated by Project operations. The following CARB and SCAQMD mitigation is recommended for Project operations:

GHG-1: Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the City of Irwindale Community Development Department Manager.

- Maximize use of solar energy, including solar panels.
- Install the maximum possible number of solar energy arrays on the building roof and/or on the Project site to generate solar energy for the facility.
- Maximize the planting of trees in landscaping and parking lots.
- Employ the use of light-colored paving and roofing materials.
- Utilize only Energy Star heating, cooling, and lighting devices and appliances.
- Employ the use of electric or alternatively-fueled sweeper with high-efficiency particulate air (HEPA)filters.

Even with implementation of CARB and SCAQMD recommendations contained in mitigation measure GHG-1, Project-related heavy-duty truck travel would result in the SCAQMD industrial land use significance threshold to be exceeded.

For these reasons, **impacts are significant and unavoidable.**

Impact 3.4.2 Conflict with Applicable GHG Plan, Policy or Regulation

Threshold:	*Would the Project conflict any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?*

The City of Irwindale does not currently have an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, Irwindale is a member city of the SCAG. SCAG's 2016–2040 RTP/SCS, adopted April 7, 2016, is a long-range visioning plan that balances future mobility and housing

needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. The RTP/SCS establishes GHG emissions goals for automobiles and light-duty trucks for 2020 and 2035 and establishes an overall GHG target for the region consistent with both the Statewide GHG-reduction targets for 2020 and the post-2020 statewide GHG reduction goals. The 2016 RTP/SCS contains over 4,000 transportation projects, including highway improvements, railroad grade separations, bicycle lanes, new transit hubs, and replacement bridges. These future investments were included in county plans developed by the six-county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal CAA requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and use resources more efficiently. The Proposed Project's consistency with the RTP/SCS goals is analyzed in detail in Table 3.4-4.

Table 3.4-4. Consistency with SCAG's RTP/SCS Goals

SCAG Goals	Compliance with Goal
Goal 1: Align the plan investments and policies with improving regional economic development and competitiveness.	**Not Applicable**: This is not a project-specific policy and is therefore not applicable.
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Consisten**t: Improvements to the transportation network in Irwindale are developed and maintained to meet the needs of local and regional transportation and to ensure efficient mobility. A number of regional and local plans and programs are used to guide development and maintenance of transportation networks, including but not limited to: • Caltrans Traffic Impact Studies Guidelines • Caltrans Highway Capacity Manual • SCAG RTP/SCS The Project is proposing an industrial warehouse use in close proximity to I-605, I-10, and I-210, which are major regional freeway corridors. Further, the I-10 corridor has been identified as a "Major International Trade Highway Route" in the California State Goods Movement Action Plan and therefore serves to accommodate existing truck trips along the interstate. The Goods Movement Action Plan is a statewide initiative to improve and expand California's goods movement industry and infrastructure in a manner which will increase mobility and relieve traffic congestion as well as reduce GHG emissions. The Plan further identifies I-10 (located 2.2 miles south of the Project site and linked to the Project site by I-605) as a "Priority Corridor" for development towards more efficient goods movement and anticipates that the development of good movement-supporting facilities, such as industrial warehouses like that proposed by the Project, will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related GHG emissions.

Table 3.4-4. Consistency with SCAG's RTP/SCS Goals

SCAG Goals	Compliance with Goal
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	**Consistent**: All modes of transit in Irwindale are required to follow safety standards set by corresponding regulatory documents. Pedestrian walkways and bicycle routes must follow safety precautions and standards established by local (e.g., City of Irwindale, County of Los Angeles) and regional (e.g., SCAG, Caltrans) agencies. Roadways for motorists must follow safety standards established for the local and regional plans. The Project is proposing an industrial warehouse use in close proximity to the I-605, I-10, and I-210, which are major regional freeway corridors. Warehouses positioned in close proximity to major freeway corridors are considered goods-movement-supporting facilities, and will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related GHG emissions.
Goal 4: Preserve and ensure a sustainable regional transportation system.	**Consistent**: All new roadway developments and improvements to the existing transportation network must be assessed with some level of traffic analysis (e.g., traffic assessments, traffic impact studies) to determine how the developments would impact existing traffic capacities and to determine the needs for improving future traffic capacities.
Goal 5: Maximize the productivity of our transportation system.	**Consistent**: The local and regional transportation system would be improved and maintained to encourage efficiency and productivity. The City of Irwindale's Public Works and Utility Department oversees the improvement and maintenance of all aspects of the public right-of-way on an as-needed basis. The City also strives to maximize productivity of the region's public transportation system (e.g., bus, bicycle) for residents, visitors, and workers coming into and out of Irwindale
Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).	**Consistent**: The reduction of energy use, improvement of air quality, and promotion of more environmentally sustainable development are encouraged through the development of alternative transportation methods, green design techniques for buildings, and other energy-reducing techniques. For example, development projects are required to comply with the provisions of the California Building and Energy Efficiency Standards and the Green Building Standards Code (CALGreen). The City also strives to maximize the protection of the environment and improvement of air quality by encouraging and improving the use of the region's public transportation system (e.g., bus, bicycle) for residents, visitors, and workers coming into and out of Irwindale.
Goal 7: Actively encourage and create incentives for energy efficiency, where possible.	**Not Applicable**: This is not a project-specific policy and is therefore not applicable.
Goal 8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	**Consisten**t: See response to RTP/SCS Goal 6.

Table 3.4-4. Consistency with SCAG's RTP/SCS Goals

SCAG Goals	Compliance with Goal
Goal 9: Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	**Consistent**: The City of Irwindale monitors existing and newly constructed roadways and transit routes to determine the adequacy and safety of these systems. Other local and regional agencies (e.g., Los Angeles County Transportation Department, Caltrans, SCAG) work with the City to manage these systems. Security situations involving roadways and evacuations would be addressed in the County of Los Angles emergency management protocols (e.g., Los Angeles County Operational Area Emergency Operations Plan) developed in accordance with the State and federal mandated emergency management regulations.

Implementing SCAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. As shown, the Proposed Project would in no way conflict with the stated goals of the RTP/SCS; therefore, the Proposed Project would not interfere with SCAG's ability to achieve the region's year 2020 and post-2020 mobile source GHG reduction targets outlined in the 2016 RTP/SCS, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS. Furthermore, the Proposed Project is not regionally significant per CEQA Guidelines Section 15206 and as such, it would not conflict with the SCAG RTP/SCS targets, since those targets were established and are applicable on a regional level.

The Proposed Project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs. For these reasons, **no impact would occur.**

3.4.5 Cumulative Impacts

Climate change is a global problem. And GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of Project-related GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the Proposed Project as well as other cumulative related projects would also be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As previously discussed, the Proposed Project would not conflict with the 2016 RTP/SCS. As a result, the Project would not conflict with any GHG reduction plans. However, the Project's cumulative contribution of GHG emissions would surpass the SCAQMD significance threshold for industrial land uses.

3.4.6 Mitigation Measures

The following GHG reduction measures shall be incorporated during Project operations:

GHG-1: Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the City of Irwindale Community Development Department Manager.

- Install solar energy arrays on the building roof and/or on the Project site to generate solar energy for the facility sufficient to meet 20% of the anticipated power usage of a typical shell warehouse facility with ancillary office.
- Employ the use of light-colored (Portland cement concrete) paving and roofing materials.
- Utilize only Energy Star heating, cooling, and lighting devices and appliances.
- Employ the use of electric or alternatively-fueled sweeper with HEPA filters.

3.4.7 Level of Significance After Mitigation

Significant contribution to greenhouse gas emissions in excess of SCAQMD industrial thresholds. Less than significant conflict with adopted plan, policy, or regulation pertaining to GHGs.

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3.5 Hazards And Hazardous Materials

This section describes the environmental and regulatory settings for hazards and hazardous materials including existing site conditions, the hazards and hazardous materials impacts that would result from the proposed Project, and the mitigation measures that would reduce these impacts.

3.5.1 Introduction

3.5.1.1 Hazardous Materials and Waste Defined

Under Title 22 of the California Code of Regulations (CCR), the term *hazardous substance* refers to both hazardous materials and hazardous wastes, and both are classified according to four properties: toxicity, ignitability, corrosiveness, and reactivity (CCR Title 22, Chapter 11, Article 3). A hazardous material is defined as a substance or combination of substances that may cause or significantly contribute to an increase in serious, irreversible, or incapacitating illness or may pose a substantial presence or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of or otherwise managed.

Public health is potentially at risk whenever hazardous materials are or will be used. It is necessary to differentiate between the hazard of these materials and the acceptability of the risk they pose to human health and the environment. A hazard is any situation that has the potential to cause damage to human health and the environment. The risk to health and public safety is determined by the probability of exposure, in addition to the inherent toxicity of a material.

Factors that can influence the health effects when human beings are exposed to hazardous materials include the dose the person is exposed to, the frequency of exposure, the duration of exposure, the exposure pathway (route by which a chemical enters a person's body), and the individual's unique biological susceptibility.

Hazardous wastes are hazardous substances that no longer have practical use, such as materials that have been discarded, discharged, spilled, or contaminated or are being stored until they can be disposed of properly (CCR Title 22, Chapter 11, Article 2, Section 66261.10). Soil that is excavated from a site containing hazardous materials is a hazardous waste if it exceeds specific CCR Title 22 criteria. While hazardous substances are regulated by multiple agencies, as described in the Regulatory Framework subsection below, cleanup requirements of hazardous wastes are determined on a case-by-case basis according to the agency with lead jurisdiction over the project.

3.5.1.2 Hazardous Materials Transport

The transportation of hazardous materials in California is subject to various federal, state, and local regulations. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery or the loading of such materials (California Vehicle Code Sections 31602(b) and 32104(a)). The Federal Motor Carrier Safety Administration (FMCSA) has identified the San Gabriel River Freeway (I-605), located approximately 100 feet west of the Project site, as a National Hazardous Materials Route that is designated for the transportation of hazardous materials (FMCSA 2019).

3.5.1.3 Other Hazards

Airport Operations

Airport-related hazards are generally associated with aircraft accidents, particularly during takeoffs and landings. Other airport operation hazards include incompatible land uses, power transmission lines, wildlife hazards (e.g., bird strikes), and tall structures that penetrate the imaginary surfaces surrounding an airport.

The closest airport to the proposed Project site is San Gabriel Airport, located approximately 2.6 miles to the southwest. The proposed Project site is not addressed in the airport's land use plan.

Wildland Fire Hazards

A wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and causing destruction to life and property. Wildfires can occur in undeveloped areas and spread to urban areas where structures and other human development are more concentrated.

Government Code 51175-89 directs the California Department of Forestry and Fire Protection (CAL FIRE) to identify areas of very high fire hazard severity zones within Local Responsibility Areas (LRA). Mapping of the areas, referred to as Very High Fire Hazard Severity Zones (VHFHSZ), is based on data and models of, potential fuels over a 30 to 50-year time horizon and their associated expected fire behavior, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure (including firebrands) to buildings.

Although the City of Irwindale contains lands designated VHFHSZ, the proposed Project is located within a heavily industrialized area and is not in the immediate vicinity of any natural or wildlife areas. It is labeled in the Irwindale submap as non-VHFHSZ (CAL FIRE 2011).

3.5.2 Environmental Setting

3.5.2.1 Site History

Development of the 24.88-acre Property began in 1967 when the California Portland Cement Company, a manufacturer of cement, ready mix concrete, building and construction supplies, and concrete products began operations. From 1967 until 2017, there have been several ownership changes, but the operations have remained the same. Previous occupants include Spancrete of California, United Ready-Mix Concrete, Hanson Spancrete Pacific Inc., the Heidelberg Cement Group and Clark Pacific. This use took advantage of nearby sand and gravel quarries for source material and convenient access to the San Gabriel Freeway (I-605) for heavy duty truck trips. The property has been unoccupied since 2017.

Two 1,000-gallon underground fuel tanks were installed on site in 1967 and removed in 1986 under the oversight of the Los Angeles County Department of Public Works (DPW). Analytical results from soil samples collected during tank removal activities indicated concentrations of total petroleum hydrocarbons (TPH) ranging from 46.5 parts per million (ppm) to 254.2 ppm. Depth to groundwater was reported at 150 to 175 feet below grade. The DPW issued a No Further Action (NFA) Letter in December 1986 (Leymaster 2018– Appendix E).

Following tank removal activities, a 4,000-gallon dual compartment fuel tank was installed in the former tank excavation area. This tank and the related dispensers and piping were removed in February 2004 under the oversight of the Los Angeles DPW. Soil samples collected beneath the tank and dispensers were below detection limits for TPH as gasoline, TPH as diesel, volatile organic compounds (VOCS), fuel oxygenates and organic lead. Soil samples were not collected along the piping run because the distance was less than 20 feet. The DPW issued an NFA letter in March 2007. Based on this, the former tanks do not represent an environmental concern (Appendix E).

On the surface, the site has largely been cleared of facilities associated with this former use, with the exception of an approximate 20,000 square-foot brick and concrete office building with a flat roof and steel-framed windows and doors at the south end of the Property; a small mobile office is attached at the northeast corner of the building; an approximate 2,883 square-foot office building; and an approximate 9,618 square-foot maintenance building are present to the east of the main building. The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage.

3.5.2.2 Site Condition Observations

A Phase I Environmental Site Assessment (ESA) was performed for the proposed Project site by Leymaster Environmental Consulting, LLC in July 2018 (Appendix E). The purpose of the ESA is to provide an assessment concerning environmental conditions as they exist at the Property. This assessment was conducted utilizing generally accepted ESA industry standards in accordance with ASTM E 1527-13, Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process and EPA Final All Appropriate Inquiries (AAI) standard practices.

Results of the ESA include historic research on the underground fuel tanks previously installed and removed onsite and the results of their corresponding soil studies and resolutions. The Property is listed in the HAZNET, LACHMS, NPDES, WDS, WIP, FINDSECHO and CIWQS databases searched by Environmental Data Resources, Inc. (EDR) as part of the ESA. In each case, no substantive information was provided that would indicate a significant environmental threat to the Property. The Property was also included in the SWEEPS, UST and HIST UST databases searched by EDR. Inclusion in these databases is resulting from the former underground storage tanks discussed above; however, the former tanks were determined not to represent an environmental concern (Appendix E).

Additionally, Ambient Environmental Inc. (Ambient) conducted a survey on the Project site to locate and identify accessible interior and exterior building materials for asbestos and painted/coated building components for lead prior to demolition activities. Asbestos content was identified in building material samples including roof felt, vinyl floor tiles, window panels, and drywall. There was no lead detected above 0.06 mg/cm^2 or 600 ppm in any of the building components sampled in the survey (Ambient 2019). However, because asbestos-containing materials (ACM) were found to be present in building materials to be removed, appropriate measures would be implemented during demolition activities to prevent the above hazard impacts from migrating off site. The project applicant shall submit specifications signed by a certified asbestos consultant for the removal, encapsulation, or enclosure of the identified ACM in accordance with all applicable laws and regulations.

3.5.3 Regulatory Setting

Federal

Resource Conservation and Recovery Act

The Resource Conservation and Recovery Act (RCRA) was established to ensure that wastes are managed in a manner that protects human health and the environment, to reduce or eliminate the amount of waste generated, and to conserve energy and natural resources through waste recycling and recovery. The RCRA gives the EPA the authority to control hazardous waste from generation, transportation, treatment, storage, to disposal. The RCRA also sets forth a framework for the management of non-hazardous solid wastes. The RCRA also enables the EPA to address environmental problems that result from underground tanks storing petroleum and other hazardous substances. In 1984 the Amendments (HSWA) significantly expanded and reinforced RCRA's protective framework. The HSWA created the Land Disposal Restrictions (LDR) program, established the RCRA Corrective Action requirements, specified permitting deadlines for hazardous waste facilities, regulated businesses that generated even small amounts of hazardous waste, and required a nationwide look at the conditions of solid waste landfills (EPA 2019a).

Comprehensive Environmental Response, Compensation, and Liability Act and Superfund Amendments and Reauthorization Act

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Superfund Amendments and Reauthorization Act (SARA) created a tax on the chemical and petroleum industries and provided a broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. This law established prohibitions and requirements concerning closed and abandoned hazardous wastes sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund for cleanup when no responsible party could be identified. In 1986, SARA amended CERCLA making several important changes and additions. SARA stressed the importance of permanent remedies and innovative treatment technologies in cleaning hazardous waste sites, required Superfund actions to consider the standards and requirements found in other State and Federal environmental laws and regulations, provided new enforcement authorities and settlement tools, increased State involvement in every phase of the Superfund program, increased the focus on human health problems posed by hazardous waste sites, encouraged greater citizen participation, and increased the size of the trust fund (EPA 2019b).

Toxic Substances Control Act

The Toxic Substances Control Act (TSCA) granted the EPA authority to create a regulatory framework to collect data on chemicals to evaluate, assess, mitigate, and control risks that may be posed by their manufacture, processing, and use. The TSCA provides a variety of control methods to prevent chemicals from posing unreasonable risk. Under TSCA Section 6, the EPA can ban the manufacture or distribution in commerce, limit use, require labeling, or place other restrictions on chemicals that pose unreasonable risks. Among the chemicals EPA regulates under Section 6 are asbestos, chlorofluorocarbons (CFCs), lead, and polychlorinated biphenyls (PCBs) (EPA 2019c).

Hazardous Materials Transportation

The U.S. Department of Transportation (DOT) developed regulations pertaining to the transport of hazardous materials by all modes of transportation. DOT regulations specify packaging requirements for different types of materials. In addition to the DOT, the US Postal Service, the EPA, the California Highway Patrol (CHP), the California Department of Transportation (Caltrans), and the California Department of Toxic Substances Control (DTSC) implement and enforce state and federal laws regarding hazardous materials transportation. The US Postal Service has regulations for the transport of hazardous materials by mail.

Transporters of hazardous materials are subject to both DOT and EPA enforcement of the regulations. Consequently, the DOT and the EPA coordinate their efforts, especially at the regional level, to obtain compliance with both the RCRA and Hazardous Materials Transportation Act (HMTA) regulations. Under the authority of the RCRA, the EPA regulates the transportation of hazardous materials. The EPA coordinates its transportation ordinances with the requirements of the HMTA and any statutes promulgated by the DOT pursuant to the HMTA. The EPA set forth these standards applicable to transporters of hazardous materials in 40 CFR 263. These EPA standards incorporate and require compliance with the DOT provisions on labeling, marking, placarding, using proper containers, and reporting discharges. The EPA's adoption of these DOT standards ensures consistency among the requirements and avoids establishing conflicting rules. The DOT's regulations are documented in 49 CFR 171-180 and implemented by the Research and Special Programs Administration within the DOT. In summary, the EPA is directed by the RCRA to establish certain standards for transporters of hazardous materials and to coordinate regulatory activities with the DOT.

EPA regulations require a transporter to:

- Comply with the manifest system (a system that ensures the integrity of the shipment from the point of origin to its destination).
- Maintain the appropriate records (signed manifests) for three years.
- Take immediate action to protect human health and the environment (e.g., notify local authorities or initiate interim measures) in the case of a discharge.
- Notify the National Response Center and submit a report to the DOT Office of Hazardous Materials Regulations in the event of a hazardous waste discharge.
- Clean up any discharges to the environment and take any actions required by the appropriate government officials for mitigating the discharge effects on human health and the environment.

Transporters of hazardous materials must also adhere to all Federal Motor Carrier Safety Regulations that the DOT adopted under the Motor Carrier Safety Act of 1984. This act specifies more requisites that apply to the transport vehicle and the driver. Among them are concise specifications for vehicle parts and accessories, such as lighting devices, brakes, glazing and windows, fuel systems, tires, and horns. Additional requirements concerning inspection, repair, and maintenance are enumerated. Special driving and parking rules that relate to hazardous materials transportation are also indicated. Standards for

drivers identify minimum qualifications, including physical qualifications, background and character profiles, and pertinent examinations. Also included among these rules are testing requirements for alcohol and controlled substances such as marijuana, cocaine, opiates, amphetamines, and phencyclidine. Other regulations pertaining to drivers include standards for the driving of vehicles, stopping, fueling, the use of lamps, the reporting of accidents, and the monitoring of a driver's hours of service.

State

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) and the State Water Resources Control Board (SWRCB) establish rules governing the use of hazardous materials. Applicable state laws include the following:

- Public Safety/Fire Regulations/Building Codes
- Hazardous Substances Information and Training Act
- Air Toxics Hot Spots and Emissions Inventory Law
- Underground Storage of Hazardous Substances Act
- Porter-Cologne Water Quality Control Act

Hazardous Materials Management

In California, the EPA has granted most enforcement authority over federal hazardous materials regulations to the CalEPA. CalEPA's DTSC and the Regional Water Quality Control Boards (RWQCB) signed a Memorandum of Agreement in March 2005 aimed to avoid duplication of efforts among the agencies involved in the regulatory oversight of investigation and cleanup of hazardous wastes. Under the Memorandum of Agreement, either DTSC or the RWQCB is assigned to be the oversight agency at the beginning of the investigation and cleanup process.

Uniform Fire Code

The Uniform Fire Code contains regulations relating to construction and maintenance of buildings and the use of premises. The code includes specifications for fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and premises. Storage of corrosive materials and liquid and solid oxidizers must be in compliance with Uniform Fire Code Sections 5404 and 6304, which include provisions for indoor storage, detached storage, liquid-tight floors, and smoke detection, among others.

California Accidental Release Prevention Program

The California Accidental Release Prevention Program (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than a certain volume of specific regulated substances at their

facilities. The list of regulated substances is found in Article 8, Section 2770.5, of the program regulations and includes common chemicals.

Hazardous Materials Release Response Plans and Inventories (Business Plan Act)

The Business Plan Act was established to prevent or minimize the damage to public health and safety and the environment, from a release or threatened release of hazardous materials. It also satisfies community right-to-know laws. This act requires businesses that handle hazardous materials in quantities equal to or greater than 55 gallons of a liquid, 500 pounds of a solid, or 200 cubic feet of compressed gas, or extremely hazardous substances above the threshold planning quantity to develop a business plan. The business plan includes an inventory of hazardous materials handled, a site plan where hazardous materials are stored, an emergency response plan, and a training program for employees (California Office of Emergency Service [OES] 2016).

Local

City of Irwindale General Plan Public Safety Element

The City of Irwindale 2008 General Plan Safety Element (City of Irwindale 2008) contains goals and policies that are intended to ensure the safety of the residents, commercial and industrial entities, and visitors by reducing potential hazards through conscientious land use planning. Because many businesses handle and generate hazardous materials, they are required to obtain necessary permits from various public agencies (City of Irwindale 2008). While many of these policies and action items require the City to take certain actions, they are not related to development of a particular project. Those policies that pertain to the proposed Project are listed below.

Public Safety Element Programs

Hazardous Materials Control

The City shall continue to cooperate with county, state, and federal agencies involved in the regulation of hazardous materials storage, use, and disposal. The City shall work with the County Fire Department in requiring hazardous materials users and generators to identify safety procedures for responding to accidental spills and emergencies. The Fire Department shall also work with local law enforcement officials in regulating the transport of hazardous materials through the City. The City will continue to promote the safe disposal of "hazardous and toxic substances "used in private households through the support of "Hazardous Materials Collections" conducted at specific locations and times within the City.

Environmental Review

The City shall continue to evaluate the environmental impacts of new development and provide mitigation measures prior to development approval, as required by the California Environmental Quality Act (CEQA). Environmental review shall be provided for major projects and those that will have a potential to adversely impact the environment. Issue areas related to public safety that may be addressed in the environmental analysis include: earth and geology, risk of upset, public services, and flood risk. In

compliance with CEQA, the City shall also assign responsibilities for the verification of the implementation of mitigation measures.

3.5.4 Impact Analysis

3.5.4.1 Thresholds of Significance

CEQA Guidelines Appendix G states that a project may have a significant effect on the environment if any of the following would occur:

1. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

2. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

3. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

4. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment?

5. For a project located within an airport land use plan area or, where such a plan has not been adopted, within 2 miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?

6. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

7. Would the project expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands area adjacent to urbanized areas or where residences are intermixed with wildlands?

Impact 3.5.1: Routine Transport, Use, or Disposal of Hazardous Materials

Threshold:	*Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*

Project Construction

Construction of the Project would involve the use of various products that contain materials classified as hazardous (e.g., solvents, adhesives and cements, certain paints, cleaning agents, and degreasers). Heavy equipment (e.g., dozers, excavators, tractors) would be operated on the subject property during construction of the Project. This heavy equipment may be fueled and maintained by petroleum-based

substances such as diesel fuel, gasoline, oil, and hydraulic fluid, which are considered hazardous if improperly stored or handled.

Improper use, storage, or transportation of hazardous materials can result in accidental releases or spills, potentially posing health risks to workers, the public, and the environment. This is a standard risk on all construction sites, and there would be no greater risk for improper handling, transportation, or spills associated with the proposed Project than would occur on any other similar construction site. Construction contractors would be required to comply with all applicable federal, state, and local laws and regulations regarding the transport, use, and storage of hazardous construction-related materials, including but not limited requirements imposed by the USEPA, DTSC, and RWQCB. The CCR Title 8 addresses workplace regulations involving the use, storage, and disposal of hazardous materials, and specific applications for construction workers. CCR Titles 22 and 26 set forth environmental health standards for hazardous materials management. California Health and Safety Code Chapter 6.95 sets forth enabling legislation for the application of CCR Titles 8, 22, and 26. Safety precautions for the prevention of fire hazards associated with the use and storage of hazardous materials are addressed in the Uniform Fire Code. Compliance with applicable federal, state, and local regulations including, but not limited to, CCR Titles 8, 22 and 26, the Uniform Fire Code, and California Health and Safety Code Chapter 6.95 would ensure that the Project would not create a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials.

Project Operation

The Project site is located within the M-2 (Heavy Manufacturing) Zone and is designated for Industrial/Business Park use. It is likely that the Project would use small amounts of commercial cleaning materials, paints and solvents for building maintenance, and pesticides/herbicides for Project landscaping could be considered hazardous materials. However, the specific businesses or tenants that would occupy the Project's proposed building are not known at this time. Based on the list of land uses permitted in the City's M-2 zone, it is possible that hazardous materials could be used during the course of daily operations, including the storage and use of refrigerant that may be used on-site (in the event that cold storage is provided on-site). If businesses that use or store hazardous materials occupy the Project site, the business owners and operators would be required to comply with all applicable federal, state, and local regulations to ensure proper use, storage, use, emission, and disposal of hazardous substances (as described above). With mandatory regulatory compliance, the Project is not expected to pose a significant hazard to the public or the environment through the routine transport, use, storage, emission, or disposal of hazardous materials, nor would the Project increase the potential for accident conditions which could result in the release of hazardous materials into the environment. With mandatory regulatory compliance, potential hazardous materials impacts associated with long-term operation of the Project would be less than significant.

Conclusion

The use, storage, and transportation of hazardous materials are subject to local, state, and federal regulations, the intent of which is to minimize the public's risk of exposure. Hazardous materials regulations, which are codified in CCR Titles 8, 22, and 26, and their enabling legislation set forth in

California Health and Safety Code Chapter 6.95, were established at the state level to ensure compliance with federal regulations to reduce the risk to human health and the environment from the routine use of hazardous substances. Based on the uses that would be part of the Project and the existing regulatory structure related to these materials, the proposed Project would not cause a threat to public safety during project construction or operation.

Therefore, because the transport, use, storage, and disposal of hazardous materials pertaining to the Project would be relatively minor and subject to extensive regulatory oversight, this impact would be **less than significant.**

Impact 3.5.2: Reasonably Foreseeable Upset of Hazardous Materials

Threshold:	*Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?*

A Phase I ESA was performed for the proposed Project site by Leymaster Environmental Consulting, LLC in July 2018 (Appendix E). Results of the ESA include historic research on underground fuel tanks previously installed and removed onsite and the results of their corresponding soil studies and resolutions. The proposed Project site is listed in multiple environmental hazards databases as searched by EDR as part of the ESA. In each case, no substantive information was provided that would indicate a significant environmental threat or concern to the proposed Project site.

As discussed above, construction and demolition activities associated with the proposed Project could release hazardous materials into the environment through reasonably foreseeable upset and accident conditions. For example, there is a possibility of accidental release of hazardous substances such as petroleum-based fuels or hydraulic fluid used for equipment. Contractors would be required to use standard controls and safety procedures that would avoid and minimize the potential for accidental release of such substances into the environment. Standard construction and demolition practices would be observed such that any materials released are appropriately contained and remediated as required by local, state, and federal law. Additionally, prior to demolition of the existing buildings, an abatement of the on-site hazardous materials such as ACM would occur to ensure hazardous materials are safely removed, in accordance with the Los Angeles County Department of Environmental Health Hazardous Materials Management Division and Los Angeles County's Fire Department standards, from the project site.

Hazardous materials related to Project operations would also be delivered to the project site via area roadways, likely via Los Angeles Street and Rivergrade Road. Transportation of hazardous materials would comply with all regulations put forth by the DOT, Caltrans, U.S. EPA, DTSC, CHP, and California State Fire Marshall. Adherence to all applicable laws and regulations governing hazardous materials would ensure that potential impacts associated with deliveries of hazardous materials to/from the project site are less than significant. However, the possibility that accidental release of small quantities of hazardous materials may occur during the operational phase is considered a potentially significant impact and requires

mitigation. Therefore, mitigation measure **HAZ-1** is required to reduce this impact to a less than significant level.

For these reasons, impacts would be **less than significant with mitigation**.

Impact 3.5.3: Hazardous Emissions or Substances Near a School Site

Threshold:	*Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?*

The nearest education facilities to the project site are Charles Bursch Elementary School, Walnut Elementary School, and Olive Middle School. All of these schools are more than one-half mile from the Project site. There are no schools known to exist within one-quarter mile of the Project site. As part of the proposed Project, prior to construction, the Project would be required to prepare a hazardous substance management, handling, storage, disposal, and emergency response plan to be followed during construction activities. This plan would ensure adherence to the construction specifications and applicable regulations regarding hazardous materials and hazardous waste, including disposal, and would further ensure that construction of the proposed Project would not create a significant hazard to the public or the environment, including nearby schools.

Although the project site does not lie within one-quarter mile of a school, the Project would take preventative measures to reduce potential hazards to the surrounding communities. The Project would prepare a Hazardous Materials Business Plan (HMBP) as described in mitigation measure **HAZ-1**; comply with provisions of the County's Fire Code, the Los Angeles County Department of Environmental Health's Hazardous Materials Management Division, and the California Health and Safety Code; and prepare and implement a hazardous substance management, handling, storage, disposal, and emergency response plan during all construction activities. Therefore, the proposed Project would not emit hazardous emissions or create significant impacts through the handling of hazardous or acutely hazardous materials, substances, or wastes within one-quarter mile of a school.

For these reasons, a **less than significant impact would occur with mitigation**.

Impact 3.5.4: Located on a List of Hazardous Materials Site

Threshold:	*Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, create a significant hazard to the public or the environment?*

Under Government Code Section 65962.5, both the DTSC and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites. The Project site is not listed by the DTSC or SWRCB as a hazardous substances site on the list of hazardous waste sites compiled pursuant to Government Code Section 65962.5 (DTSC 2019; SWRCB 2019).

As mentioned in Impact 3.8.2, the proposed Project site is listed in multiple environmental hazards databases as searched by EDR as part of the ESA. The Property is listed in the HAZNET, LACHMS, NPDES, WDS, WIP, FINDS ECHO and CIWQS databases searched by EDR. In each case, no substantive information was provided that would indicate a significant environmental threat to the Property. The Property was also included in the SWEEPS, UST and HIST UST databases searched by EDR. Inclusion in these databases is resulting from the former underground storage tanks discussed above and does not represent an environmental concern. As such, no environmental hazard concerns are known to exist at the proposed Project site.

For these reasons, **no impact would occur**.

Impact 3.5.5: Located Within an Airport Safety Zone

Threshold:	*For a project located within an airport land use plan area or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard or excess noise for people residing or working in the project area?*

The closest airport to the proposed Project site is San Gabriel Airport (formerly El Monte Airport), located approximately 2.5 miles southwest of the site. However, the project site is not located within the San Gabriel Airport's safety zone area including the runway protection zone. Additionally, as noted in the City's General Plan Update (2008), there are no specific flight corridors that overfly the City. No helistop/helipad is proposed, and no tall objects are proposed on the Project site that would cause a hazard to flight.

For these reasons, **no impact would occur.**

Impact 3.5.6: Interfere with Emergency Response or Evacuation

Threshold:	*Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*

The City of Irwindale adopted a Multi-Hazard Functional Plan that addresses response to and short-term recovery from disasters and emergency situations. Additionally, the City's General Plan includes a Public Safety Element that addresses seismic and geologic hazards, flood risk, hazardous materials, and noise hazards. These two plans are described above in Section 3.5.3.3. The Project would comply with the Multi-Hazard Functional Plan in the event of an emergency or citywide disaster.

Implementation of the proposed Project would increase the potential need for emergency access to and from the site. The Project design proposes access to the site from three driveways (two from Los Angeles Street and one from Rivergrade Road). During the course of the City of Irwindale's required review of the proposed Project's applications, the site plan would be reviewed to ensure that adequate access to and from the site and around the proposed buildings is provided for emergency vehicles.

With adherence to the City of Irwindale requirements for emergency vehicle access, impacts would be **less than significant.**

Impact 3.5.7: Wildland Fire Hazards

Threshold:	*Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*

Although the City of Irwindale contains lands designated VHFHSZ, the proposed Project is located within a heavily industrialized area and is not in the vicinity of any natural or wildlife areas. It is labeled in the Irwindale submap as non-VHFHSZ (CAL FIRE 2011). As such, implementation of the proposed Project is not likely to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Additionally, as discussed above, the Project would not impair emergency response plans if wildland fire hazards were present.

For these reasons, **no impact would occur.**

3.5.5 Cumulative Impacts

Hazardous material, human health, and safety impacts as described in CEQA Appendix G are generally site-specific and not cumulative in nature, as impacts generally vary by land use, site characteristics, and site history. The cumulative setting for the proposed Project would be the project as well as existing and future projects in the immediate vicinity.

According to the site-specific Phase 1 ESA, the Project site is not listed by the DTSC or SWRCB as a hazardous substances site on the list of hazardous waste sites compiled pursuant to Government Code Section 65962.5 (DTSC 2019; SWRCB 2019). Although each site from the cumulative projects list has potentially unique hazardous materials considerations, these sites are not within close proximity to the Project site. Furthermore, it is expected that these projects will comply with federal, state, and local statutes and regulations applicable to hazardous materials. Development of the project site would not, therefore, create a cumulative impact related to exposing the public to hazardous materials. For these reasons, cumulative impacts to the public or environment resulting from the accidental release of hazardous materials would be **less than significant.**

Impact 3.5.8: Cumulative Hazardous Materials and Emergency Response Impacts

Threshold:	*Would the proposed project, in combination with other existing, proposed, and reasonably foreseeable future development in the area, cumulatively increase exposure of people, property, and the environment to hazardous materials and interference with emergency response?*

Cumulative hazardous materials impacts would result if other existing, planned, or reasonably foreseeable projects in the vicinity of the Project area included the addition of hazardous materials above planning thresholds. This would change the total amount of hazardous materials being transported over public roadways and being used and stored near the proposed project site.

3.5.6 Mitigation Measures

HAZ-1: If applicable, the Project applicant shall prepare and implement a Hazardous Materials Business Plan (HMBP) in accordance with the requirements of the Los Angeles County Fire Department Health Hazardous Materials Management Division, which is the Certified Unified Program Agency (CUPA) for Los Angeles County. The HMBP shall include a hazardous material inventory, emergency response procedures, training program information, and basic information on the location, type, quantity, and health risks of hazardous materials stored, used, or disposed of at the proposed Project site, and procedures for handling and disposing of unanticipated hazardous materials encountered during construction. The HMBP shall include an inventory of the hazardous waste generated on site and would specify procedures for proper disposal. Any accidental release of small quantities of hazardous materials shall be promptly contained and abated in accordance with applicable regulatory requirements and reported to the County Health Hazardous Materials Division. Implementation of the HMBP for the Project would ensure that minor spills or releases of hazardous materials would not pose a significant risk to the public or the environment.

3.5.7 Level of Significance After Mitigation

Following implementation of mitigation measure **HAZ-1**, project impacts related to hazardous materials would be **less than significant.**

3.6 Hydrology And Water Quality

This section describes the environmental setting for hydrology and water quality, including the regulatory setting and existing site conditions, the impacts on hydrology and water quality that would result from the proposed Project, and the mitigation measures that would reduce these impacts.

3.6.1 Introduction

The following analysis of the potential environmental impacts related to hydrology and water quality are derived primarily from the following sources:

- Geotechnical Investigation prepared by Southern California Geotechnical (November 2019);
- Preliminary Hydrological Calculations prepared by Thienes Engineering (December 2019);
- Low Impact Development (LID) study prepared by Thienes Engineering (December 2019); and
- Proposed Site Drainage Memo prepared by Thienes Engineering (March 2020).

3.6.2 Environmental Setting

Regional Hydrology

The proposed Project is located within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB), which administers the water quality control plan (Basin Plan) within Los Angeles County. The boundaries of the Santa Ana River Basin are defined in part by physical watershed divisions and in part by administrative boundaries (i.e. Orange County/Los Angeles County line). The proposed Project is within the San Gabriel Valley hydrologic area (Basin No. 405.40), and the 167-square mile Main San Gabriel hydrologic sub-area (Basin No. 405.41), one of the many subareas within the Los Angeles RWQCB. The Project site is encompassed by the Santa Fe Flood Control Basin-San Gabriel River Sub-watershed.

Site Hydrology and On-Site Drainage

The Project site is located on flat terrain; there are no slopes, natural drainage systems or channel crossings on the site. The site is currently developed with several warehouse type buildings, small office buildings, and paved parking lots. The majority of the Project site drains from north to south to Los Angeles Street under existing conditions. A smaller portion of the site surface drains to Rivergrade Road located at the northerly portion of the Project site. The existing condition 50-year peak flow rate to Los Angeles Street is approximately 43.5 cfs, while the peak flow rate to Rivergrade Road is about 10.6 cfs.

Flow to Los Angeles Street is intercepted in existing catch basins. One catch basin is located adjacent to the Project site and conveys runoff to the existing quarry located on the southerly side of Los Angeles Street. The other catch basin is located westerly of the Project site and appears to connect to an existing Los Angeles County Department of Public Works storm drain system (Project No. 445 Line "B") located at the southerly property line of the Project site. This storm drain system conveys runoff westerly, ultimately discharging into the San Gabriel River.

The site-specific geotechnical investigation of the proposed Project site (SCG 2018 – Appendix F) indicates the static groundwater table at the site existed at a depth in excess of 50± feet at the time of the subsurface exploration. Historic groundwater data indicates the historic high groundwater level for the site is 35 feet below ground surface. The soil types, as found in the Los Angeles County Hydrology Manual, are 007 and 008 for Hanford Gravelly Sandy Loam and Hanford Silt Loam, respectively. The site-specific infiltration report recommended an infiltration rate of 20.0 in/hr. This rate is suitable for infiltration facilities.

Project Drainage Concept

The preliminary proposed condition 50-year peak flow rate for the site is approximately 77.5 cfs. This is a direct addition of individual subarea peak flow rates and does not include detention. To achieve only 6.5cfs total discharge from the Project site onsite detention is required. Truck yards at the northerly and westerly portion of the site will be used for detention as temporary storage. The easterly portion of the site is a proposed vehicle parking area and does not have the ability to detain runoff on the surface. Therefore, additional storage volume is provided in the proposed underground storage system. While the underground storage is intended to meet water quality volumes, this volume can be increased to accommodate additional storage capacity for peak flow rates. The proposed onsite storm drains and storage (detention) would be sized during the project site's final design phase to restrict outflow to the desirable discharge rates.

According to a LID Report (Thienes Engineering 2019a – Appendix G) prepared for the proposed Project, the project involves replacing 5,000 square feet or more of impervious surface area on an already developed site. This redevelopment results in an increase of more than fifty percent of the impervious surfaces of the previously existing development, and the existing development was not subject to LID requirements.

The proposed Project is required to incorporate appropriate stormwater mitigation measures into the design plan for the entire site and specifically for parking lots. According to the site-specific LID Report, the project will infiltrate the Storm Water Quality Design Volume (SWQDv) runoff generated by the project through the use of an underground Corrugated Metal Pipe (CMP) system. The CMP detention system will be utilized to treat the SWQDv and route stormwater greater than the 85th percentile into the mainline (Appendix G).

3.6.3 Regulatory Setting

Federal

Clean Water Act

The United States Environmental Protection Agency (EPA) is the federal agency responsible for water quality management. The Federal Water Pollution Control Act of 1948 was the first major United States (U.S.) law to address water pollution. As amended in 1972, the law became commonly known as the Clean Water Act (CWA). The CWA establishes the basic structure for regulating discharges of pollutants in the Waters of the U.S. and regulating quality standards for surface waters.

Section 401. Section 401 of the federal CWA requires that any applicant for a federal permit or license that may result in a discharge to waters of the U.S. must obtain certification from the State. The certification declares that the discharge will comply with applicable provisions of the Act, including water quality standards requirements. Most projects receiving a United States Army Corps of Engineers (USACE) nationwide permit also need individual Section 401 certification. The State Water Resource Control Board (SWRCB), through the RWQCB administers these permits.

Section 402. The National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the U.S. An NPDES permit allows facilities to discharge a specified amount of a pollutant into a receiving water under certain conditions. The State of California is authorized to administer various aspects of the NPDES permit under Section 402 of the CWA. The General Construction Permit treats any construction activity over one acre as an industrial activity, requiring a permit under the State's General NPDES permit. The SWRCB, through the RWQCB administers these permits.

Section 404. In 1972, Section 404 of the federal CWA established a program to regulate the discharge of dredged or fill material into waters of the U.S. The CWA defines waters of the U.S. to include tributaries to navigable waters, interstate wetlands, wetlands which could affect interstate or foreign commerce, and wetlands adjacent to other waters of the U.S.

The program is jointly administered by the USACE and the EPA. The USACE is responsible for the day-to-day administration and permit review and the EPA provides program oversight. The fundamental rationale of the program is that no discharge of dredged or fill material should be permitted if there is a practicable alternative that would be less damaging to aquatic resources or if significant degradation would occur to the nation's waters. Permit review and issuance follows a sequence process that encourages avoidance of impacts, followed by minimizing impacts and, finally, requiring mitigation for unavoidable impacts to the aquatic environment. The sequence is described in the guidelines at Section 404(b)(1) of the CWA.

Proposed activities are regulated through a permit review process. An individual permit is required for potentially significant impacts. Individual permits are reviewed by the USACE, which evaluates applications under a public interest review, as well as the environmental criteria set forth in the Section 404(b)(1) guidelines. However, for most discharges that will have only minimal adverse effects, a general permit may be suitable. General permits are issued on a nationwide, regional, or state basis particular categories of activities. The general permit process eliminates individual review and allows certain activities to proceed with little or no delay, provided that the general or specific conditions for the general permit are met.

Section 408. Modification to a federal levee system requires approval under Section 408 of the CWA. There are two types of Section 408 permits; a minor and a major permit. The USACE District Engineer is the approval authority for a minor 408 authorization. A minor 408 authorization applies to relatively minor, low impact alterations/modifications related to the operation and maintenance (O&M) responsibilities of the non-Federal sponsors. The types of alterations/modifications that can be approved under a minor 408 authorization include placement of structures such as pump houses, stairs, pipes, bike trails, sidewalks, fences, driveways, power poles, and instrumentation provided these

alterations/modifications do not adversely affect the functioning of the project and flood fighting activities. A major 408 authorization requires the approval by the USACE Chief Engineers and includes degradations, raisings, and realignments of flood control structures. Other alterations/modifications would include non-Federal levee tie-ins, ramps, riverside landscaping, retaining walls, fill against a levee (such as railroad trestles and overbuild), bridges, relief wells, seepage berms, and stability berms. Engineering analysis must be conducted in instances where it is not clear if the proposed alteration/modification is within the authority delegated to a District Engineer or requires the approval by the Chief of Engineers (USACE 2008).

State

Fish and Game Code Section 1602

The California Department of Fish and Wildlife (CDFW) requires notification before beginning an activity that will substantially modify a river, stream, or lake. If CDFW determines that the activity could substantially adversely affect an existing fish and wildlife resource, a Lake or Streambed Alteration Agreement is required.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act was established in 1969 and is the principal law governing water quality regulation in California. It created a comprehensive program to protect water quality and the beneficial uses of water. The Act created the SWRCB to set statewide policy, and together with the nine RWQCBs, implements state and federal laws and regulations. The Porter-Cologne Act applies to surface waters, wetlands, and ground water and to both point and nonpoint sources of pollution (SWRCB 2014). The Act also implements many provisions of the CWA, such as the NPDES permitting program and Waste Discharge Requirements (WDRs).

Local

Los Angeles Regional Water Quality Control Board

The Los Angeles Regional Water Quality Control Board (LARWQCB) is one of the nine regional boards in California. The LARWQCB has jurisdiction over coastal watersheds of Los Angeles and Ventura Counties and very small portions of Kern and Santa Barbara Counties. LARWQCB's activities include: preparing, monitoring compliance with, and enforcing WDRs; implementing and enforcing local storm water control efforts; enforcing water quality laws, regulations, and waste discharge requirements; and informing the public on water quality issues, among other things (LARWQCB 2019a). The City of Irwindale is located within Region 4 of the LARWQCB.

LARWQCB's Basin Plan

The nine RWQCBs throughout California each adopt and implement a Basin Plan designed to preserve water quality and protect all regional waters. In 2014, the LARWQCB created a Basin Plan for the protection of the beneficial uses of waters within the coastal watersheds of Los Angeles and Ventura counties. Specifically, the Basin Plan: (i) identifies beneficial uses for surface and ground waters, (ii) includes the narrative and numerical water quality objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's anti-degradation policy, and (iii)

describes implementation programs and other actions that are necessary to achieve the water quality objectives established in the Basin Plan (LARWQCB 2014).

Municipal Separate Storm Sewer System (MS4) Permit

The LARWQCB issued Order No. R4-2012-0175 on November 08, 2012, which established WDRs for Municipal Separate Storm Sewer Systems (MS4) Discharges within the Coastal Watersheds of Los Angeles County, except those discharges originating from the City of Long Beach. This permit covers 84 cities and most of the unincorporated areas of Los Angeles County. The County and cities are designated as the Permittees and the Los Angeles County Flood Control District is designated as the Principal Permittee.

The MS4 Permit requires Permittees to implement a development planning program to address stormwater pollution. Certain types of projects are required to implement Standard Urban Stormwater Mitigation Plans throughout the operational life of their projects. The City of Irwindale enforces the provisions of the MS4 Permit through its Storm Water and Urban Runoff Pollution Ordinance (Municipal Code Chapter 8.28).

Standard Urban Stormwater Mitigation Plan

On July 15, 1996, the LARWQCB issued a NPDES permit to the 85 incorporated cities within Los Angeles County. Pursuant to provisions within the permit, the County was required to submit Standard Urban Storm Water Mitigation Plans (SUSMP). The SUSMPs are designed to reduce stormwater pollution discharge by designating best management practices (BMPs) that must be used in specified categories of development projects (LARWQCB 2019a). The SUSMP must be reviewed and approved by the City, and must include a long term maintenance agreement to ensure all features remain effective and operational.

Low Impact Development

LID is a leading stormwater management strategy that expands upon the SUSMP. Urban runoff discharged from municipal storm drain systems can contain pollutants that negatively affect the ocean, rivers, plant and animal life, and public health. This discharge is one of the principal causes of water quality impacts in most urban areas. LID seeks to mitigate the impacts of runoff and stormwater pollution by mimicking the natural hydrology of the site, thus retaining precipitation on-site to the maximum extent practicable.

LID comprises a set of site design approaches and best management practices (BMP) that are designed to address runoff and pollution at the source. These LID practices can effectively remove nutrients, bacteria, and metals while reducing the volume and intensity of stormwater flows.

The Los Angeles County's LID ordinance became effective in May 2012. The main purpose of this law is to ensure that development and redevelopment projects mitigate runoff in a manner that captures rainwater at its source, while utilizing natural resources. Project applicants are required to prepare and implement a stormwater mitigation plan when their projects fall into any of these categories:

- Single-family hillside residential developments
- Housing developments of 10 or more dwelling units (including single family tract developments)
- Industrial /Commercial developments with one acre or more of impervious surface area

- Automotive service facilities
- Retail gasoline outlets
- Restaurants
- Parking lots of 5,000 square feet or more of surface area or with 25 or more parking spaces
- Projects with 2,500 square feet or more of impervious area that are located in, adjacent to, or draining directly to designated Environmentally Sensitive Areas (ESA)

City of Irwindale General Plan

The City's General Plan contains a number of policies and programs designed to preserve and enhance water quality. While many of these policies and action items require the City to take certain actions, they are not related to development of a particular project. The following goals and policies in the Resource Management Element are relevant to the impacts on hydrology and water quality.

Resource Management Element Policies

The City will continue to cooperate with the other agencies that are charged with improving air and water quality in the region.

Issue Area – Resource Preservation

The City of Irwindale will maintain and preserve those natural and man-made amenities that contribute to the City's livability.

> *Resource Management Element Policy 9.* The City will continue to cooperate with the other agencies that are charged with improving air and water quality in the region.

Programs within the Resources Management Element relevant to hydrology and water quality include the following:

Stormwater Pollution Prevention

This program is designed to prevent contaminants from entering the storm drain system. A key element of this program is the National Pollution Discharge Elimination System (NPDES) requirements, which are administered through a countywide permit. These requirements call for measures to be imposed during construction activities, handouts for residential uses, and best management practices (BMPs) for nonresidential uses. The City shall also continue to implement projects to maintain storm water quality, such as street sweeping, catch basin grills, signs, etc.

Environmental Review

The City shall continue to evaluate the environmental impacts of new development and identify applicable mitigation measures prior to development approval, as required by the CEQA. Environmental review shall be provided for those projects that will have a potential to adversely

affect the environment. Issue areas that will be addressed in the environmental analysis related to resource issues include: air quality, water and hydrology, plant life, animal life, natural resources, energy, aesthetics, recreation, and cultural resources. In compliance with CEQA, the City shall also assign responsibilities for the verification of the implementation of any mitigation measures.

3.6.4 Impact Analysis

3.6.4.1 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would have significant effect on the hydrology and water environment if it would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin.

3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:

    a. result in substantial erosion or siltation on- or off-site;
    b. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    c. create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
    d. impede or redirect flood flows.

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation.

5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Impact 3.6.4.1: Water Quality Standards/Waste Discharge Requirements

Threshold:	*Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*

The California Porter-Cologne Act and the CWA require that comprehensive water quality control plans be developed for all waters within the State of California. Because construction of the proposed Project would require land disturbance greater than one acre, the proposed Project would be required to prepare and implement a SWPPP in accordance with the State's General Permit for Construction Activities. In this manner, the Project would also comply with requirements of the City's NPDES Permit and other water quality requirements or storm water management programs specified by the RWQCB. In combination,

implementation of these requirements would protect City and regional water quality by preventing or minimizing potential pollutant discharges to the watershed.

Construction of the Project would involve grading, paving, utility installation, building construction, and landscaping installation, which would result in the generation of potential water quality pollutants such as silt, debris, chemical paints, and other solvents with the potential to affect water quality. BMPs have demonstrated through years of field testing and use the ability to reduce stormwater impacts to less than significant levels. Although not comprehensive, some of the BMPs that the Project would potentially be required to implement during project construction are:

Erosion Control. Employ measures to prevent the movement of soil by wind or water during project construction and may include watering and physical barriers to the movement of soil particles.

Sediment Control. Employ features to prevent the offsite conveyance of sediments, including onsite catch basin inlet protection.

Tracking of Soil. Employ measures to effectively minimize the tracking of soil by vehicles and may include gravel driveways, wheel washes, and street sweeping.

Waste and Cleanup. The SWPPP must address storage and disposal related to debris, trash, concrete, asphalt, paint, coatings, solvents, and other materials applicable to preparation and construction at the project site.

Other Reasonable BMPs. The SWPPP must also implement other applicable BMPs as needed to keep other pollutants away from stormwater. The SWPPP must identify additional applicable measures taken during the rainy season and when storms are anticipated.

Long-term operation of the Project site with land use allowed under the M-2 (Heavy Manufacturing) zone is anticipated to generate storm water pollutants such as bacterial indicators, metals, nutrients, pesticides, toxic organic compounds, sediments, trash and debris, and oil and grease. As such, the project owner would be required to ensure that such pollutants are contained or disposed of properly. For example, the parking lot would be swept on a monthly basis, minimum, and before any rain events. Absorbent materials would be used to collect any spilled oil, and disposed of properly, to ensure they do not contaminate stormwater. Drain inserts would be used at all proposed onsite inlets and collect drainage from impervious areas prior to flowing through the underground CMP system for infiltration (Appendix G).

In addition to these measures, compliance with the MS4 Permit and the Irwindale Municipal Code Section 8.28 (Storm Water and Urban Runoff Pollution) would ensure that stormwater runoff from the site during construction and operation would not violate water quality standards or waste discharge requirements.

For these reasons, impacts with respect to water quality are considered **less than significant.**

Impact 3.6.4.2: Groundwater

Threshold:	*Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?*

The Project site is located within the San Gabriel Valley Groundwater Basin, which is situated in eastern Los Angeles County and includes the water-bearing sediments underlying most of the San Gabriel Valley and a portion of the upper Santa Ana Valley. Recharge of the Basin comes mainly from direct percolation of precipitation, runoff from the San Gabriel Mountains, numerous spreading grounds, and treated sewage effluent. The San Gabriel River is the major body of surface water in the city and most of the city's stormwater is conveyed there. The river is located approximately 1,400 feet west of the Project site.

The site-specific geotechnical investigation of the proposed Project site (SCG 2018) indicates the static groundwater table at the site existed at a depth in excess of 50± feet at the time of the subsurface exploration. Historic groundwater data indicates the historic high groundwater level for the site is 35 feet below ground surface. Project construction and operation would not interfere with the existing aquifer.

According to the LID Report prepared for the proposed Project, the Project would replace 5,000 square feet or more of impervious surface area on the developed site. This redevelopment of the site would result in an increase of more than 50 percent of the impervious surfaces of the previous concrete manufacturing development, which was not subject to LID requirements. Therefore, the Project would install storm drainage infrastructure to ensure that storm waters properly drain from the project site and eventually convey to the San Gabriel River. Where the surface of the project site is permeable, surface water flows may percolate to the San Gabriel Valley Groundwater Basin below the project site. Additionally, the Project does not include groundwater wells and would be served by existing water supplies.

For these reasons, impacts to groundwater supplies would be **less than significant.**

Impact 3.6.4.3: Drainage Patterns

Threshold:	*Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:* *i) result in substantial erosion or siltation on- or off-site;* *ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;* *iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or* *iv) impede or redirect flood flows?*

(i) Construction of the proposed Project would involve grading of the site's existing ground contours and altering the site's existing drainage pattern. The Project is designed so that pollutants from the impervious surfaces are disconnected prior to discharging offsite. Upon buildout of the Project, stormwater runoff from all portions of the Project site would be captured by on-site storm drains that would be routed to catch basins onsite and at Los Angeles Street and Rivergrade Road. Drain inserts would be used at all proposed onsite inlets and collect drainage from impervious areas prior to flowing through the underground CMP system for infiltration.

Furthermore, BMPs would be included as part of the SWPPP prepared for the proposed Project and would be implemented to control erosion and siltation impacts during construction activities. Implementation of BMPs related to erosion control would ensure that impacts remain **less than significant.**

(ii) Per the MS4 Permit, the Project would be required to incorporate LID features to better capture and treat a major portion of stormwater runoff. Thienes Engineering conducted preliminary hydrological calculations to determine the existing condition and proposed condition 50-year peak flow rates from the Project site, which drain into existing catch basins in Rivergrade Road and Los Angeles Street. The County has indicated that pursuant to hydraulic analysis of the existing system, additional flow could be added provided that the extra input will not exceed the present condition hydraulic grade line (H.G.L.) by more than 0.2 feet (Thienes Engineering, 2019b; Appendix H). Hydraulic modeling for the existing storm drain system has been performed by Thienes Engineering based on plans and peak flow rates provided by the County. The modeling indicates the maximum peak flow rate that could be added to the County storm drain is 6.5 cfs.

The preliminary proposed condition 50-year peak flow rate for the Project site is approximately 77.5 cfs. This is a direct addition of individual subarea peak flow rates and does not include detention. Truck yards at the northerly and westerly portion of the site will be used for temporary storage. The easterly portion of the site is a proposed vehicle parking area and would not have the ability to detain runoff on the surface. Therefore, additional storage volume would be provided in the proposed underground storage system. While the underground storage is intended to meet adequate water quality treatment volumes, this volume can be increased to accommodate storage of some peak flow rates.

Hydrograph analysis to determine required volumes for storage indicates that between storage in the truck yards and additional underground storage, the discharge from the majority of the Project site can be reduced to 4.5 cfs, leaving approximately 2.0 cfs for the parking areas adjacent to Los Angeles Street. Here, smaller individual storage areas would be provided in the parking lots. Overall, a total discharge of no more than 6.5 cfs for the Project site can be achieved.

The analysis indicates the peak flow rate can be reduced to an amount acceptable to the County for connection to the existing County storm drain system. As an alternative, this same reduced peak flow rate can be discharged to the existing City catch basin adjacent to the site. In either case, the overall 50-year peak flow rate can be reduced to approximately 15% (6.5 cfs/43.5 cfs) of the existing condition 50-year peak flow rate currently tributary to Los Angeles Street.

The proposed onsite storm drains and storage (detention) would be sized during the project site's final design phase to restrict outflow to the desirable discharge rates. As such, surface runoff volumes would not exceed existing conditions and impacts would be **less than significant.**

(iii) As previously discussed, the proposed Project would increase impervious surfaces throughout the project site and would require the installation of storm drainage infrastructure to ensure that storm waters properly drain from the project site. The storm drain analysis indicates peak flow rates can be reduced with onsite detention to an amount acceptable to the County for connection to the existing County storm drain system. As an alternative to a connection to the County system, with incorporation of additional storage volume in the proposed underground storage system, this same reduced peak flow rate could be discharged to the existing City catch basin adjacent to the site. In either case, the overall 50-year peak flow rate could be reduced below the existing condition 50-year peak flow rate currently tributary to Los Angeles Street.

Pursuant to a City of Irwindale Condition of Approval, the proposed onsite storm drains shall be sized during the project site's final design phase to restrict outflow to the desirable discharge rates. With the incorporation of these measures, the reduced flows would be equal to or less than existing flows that are currently generated from the Project site. As the developed peak flows for the Project site would be limited and metered through the use of onsite detention basins, there would be adequate capacity in the existing storm drain system for the proposed flows.

The site-specific LID report indicates that the proposed underground CMP detention system will be utilized to treat the SWQDv and route stormwater greater than the 85th percentile into the mainline. Thus, the Project would not result in a substantial additional source of polluted runoff.

The onsite and offsite facilities would be adequate to collect, treat and convey stormwater runoff from the Project site and no additional direct connections would be required. Impacts associated with the existing and planned storm drain systems would be **less than significant.**

(iv) Pursuant to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 06037C1700F, the proposed Project site is located in Zone X, which is determined to be outside the 0.2% annual chance floodplain. Therefore, impacts related to placement of structures within a 100-year flood hazard area would be **less than significant.**

For the reasons described above, impacts to this threshold would be **less than significant.**

Impact 3.6.4.4: Hazardous Zones

Threshold:	*In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation?*

According to the City of Irwindale General Plan Safety Element (2008), the Project site is not identified within a flood hazard, tsunami, or seiche zone. Due to the depth of the Vulcan Durbin Quarry area across Los Angeles Street south of the Project site, impounded water in this quarry is not expected to overtop quarry walls during a seismic event. Therefore, the possibility of an earthquake induced seiche from the

Vulcan Durbin Quarry would be less than significant. For these reasons, impacts to this threshold would be **less than significant.**

Impact 3.6.4.5: Water Quality/Groundwater Management Plans

Threshold:	*Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*

As described above in Section 3.6.3, the RWQCB created a Basin Plan for the protection of the beneficial uses of waters within the coastal watersheds of Los Angeles and Ventura counties. Specifically, the Basin Plan: (i) identifies beneficial uses for surface and ground waters, (ii) includes the narrative and numerical water quality objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's anti-degradation policy, and (iii) describes implementation programs and other actions that are necessary to achieve the water quality objectives established in the Basin Plan (LARWQCB 2014). In accordance with these goals and policies, the Project's proposed storm drain system and implementation of the SWPPP would reduce the project's contributions to water quality and runoff impacts to levels that are less than significant. Additionally, an underground CMP detention system would be utilized to treat the SWQDv and route stormwater greater than the 85th percentile into the mainline. As such, the proposed Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

For these reasons, impacts would be **less than significant.**

3.6.5 Cumulative Impacts

3.6.5.1 Cumulative Setting

The cumulative setting for hydrology and water quality includes the San Gabriel River Watershed as described in detail in the Existing Setting subsection above.

3.6.5.2 Cumulative Impacts to Hydrology and Water Quality

The proposed Project, when considered in combination with existing, approved, proposed, and reasonably foreseeable development in the watershed, would alter cumulative drainage conditions, rates, volumes, and water quality, which could result in potential flooding and stormwater quality impacts within the overall watershed. However, as discussed in Impacts 3.6.1 and 3.6.2, the Project's proposed storm drain system and implementation of the SWPPP would reduce the project's incremental contributions to water quality and runoff impacts to levels that are less than significant. As such, cumulative impacts to hydrology and water quality are **less than significant.**

3.6.6 Mitigation Measures

No mitigation measures are required.

3.6.7 Level of Significance After Mitigation

Less than significant impact.

3.7 Land Use and Planning

This section describes the environmental and regulatory setting for land use and planning, including applicable plans, policies, regulations, and/or laws, and existing land use designations. This section also describes land use impacts that would result from the proposed Project, and any mitigation measures that would be needed to reduce significant impacts.

3.7.1 Introduction

The proposed Project site is located in an area designated Industrial/Business Park and zoned M-2 Heavy Manufacturing by the City of Irwindale General Plan (2008) and would develop an industrial warehouse project that is compatible with surrounding uses. According to the General Plan, this type of development is "usually well landscaped, provides abundant parking, and a uniform architectural design theme. These attractive developments typically include office, manufacturing, and warehousing uses" (City of Irwindale 2008). While this use is consistent with the proposed Project site's current M-2 Heavy Manufacturing zoning designation, no specific tenant(s) have been identified to occupy the proposed building.

Since 1967, the proposed Project site has been used by a pre-cast concrete manufacturing company. The proposed Project would involve the demolition of existing on-site buildings and the construction of a ±528,710 square feet (SF) stand-alone concrete tilt-up building that is compatible with surrounding uses. The Project would construct approximately 261 vehicle parking spaces, 26 bicycle parking spaces, and 109,330 SF of landscaping. Compatibility with surrounding land uses and conformity with City Commercial and Industrial Design Guidelines would be established through the City's project review and Site Development Permit.

3.7.2 Environmental Setting

The City of Irwindale contains approximately 9.6 square miles, or 6,150 acres, and has a population of approximately 1,461 residents. The City began as a small residential settlement but its predominant land use has been sand and gravel extraction. Following the City's incorporation in 1957, large expanses of the City's land area were subsequently zoned for heavy manufacturing uses (M-2, Heavy Manufacturing). This industrial zoning was thought to be the most appropriate type of land use because it was compatible with the extensive mining operations that were already in place. Thus, typical residential and commercial development found in Irwindale currently represents less than 17% of the City's total land area, far less than comparable figures for the surrounding communities. Industrial development represents approximately 15% of the City's total land area (City of Irwindale 2008).

Surrounding the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south. The proposed Project site is 24.88 acres in size and is currently occupied by three office buildings totaling 32,501 SF.

Until 2017, the proposed Project site has been the location of a former hollow core concrete manufacturing business. The site has largely been cleared of facilities associated with this former use, with

the exception of an approximate 20,000 SF brick and concrete office building with a flat roof and steel-framed windows and doors at the south end of the Property; a small mobile office is attached at the northeast corner of the building; an approximate 2,883 SF office building; and an approximate 9,618 SF maintenance building are present to the east of the main building. The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage.

3.7.3 Regulatory Setting

Regional

Southern California Association of Governments

The Southern California Association of Governments (SCAG) encompasses all of Ventura, Los Angeles, San Bernardino, Orange, Riverside, and Imperial counties. SCAG's 2008 Regional Comprehensive Plan is a long-term comprehensive plan which addresses the region's many challenges and provides a strategic vision for handling the region's land use, housing, economic, transportation, environmental and overall quality of life needs. In 2016, SCAG adopted the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy, a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals.

San Gabriel Valley Council of Governments

The San Gabriel Valley Council of Governments (SGVCOG) a joint powers authority of 30 incorporated cities, the unincorporated communities in Los Angeles County Supervisorial Districts 1, 4, and 5, and the three San Gabriel Valley Municipal Water Districts (San Gabriel Valley Municipal Water District, Three Valleys Municipal Water District, and Upper San Gabriel Valley Municipal Water District). Its purpose is to maximize resources and advocate for regional and member interests to improve the quality of life in the San Gabriel Valley. SGVCOG has been delegated the responsibility of regional, community, and intercommunity transportation planning, supporting regional water resiliency, coordinating environmental efforts, addressing homelessness, and providing a forum to facilitate discussion on emerging issues.

Local

City of Irwindale 2020 General Plan

The City of Irwindale 2020 General Plan was adopted in June 2008 to serve as a blueprint for future planning and development in the City. The goals of the Plan include: finding a balance between the ongoing mining activities, residential neighborhoods and businesses that contribute towards Irwindale's community character; overseeing the safe reclamation of both the inactive and active quarries and to facilitate their timely re-use; promoting new forms of development that will lessen the City's previous reliance on mining as a means to provide both jobs and revenue; and improving the overall environment of the community. The General Plan designates the project site Industrial/Business Park and it is zoned M-2 (Heavy Manufacturing) (Figure 3.7-1. Existing General Plan Land Use Designations) . According to the General Plan, this type of development is usually characterized by "intensive industrial operations that may also include outdoor storage of materials and equipment as an ancillary use." The Industrial/Business

Park designation corresponds with the following zone districts: C-M (Commercial Manufacturing), M-1 (Light Manufacturing), and M-2 (Heavy Manufacturing) (City of Irwindale 2008).

The Community Development Element serves as a guide for land use and development within the City of Irwindale. The policies included in the Element focus on the following three major issue areas: 1) the City's commitment to comprehensive land use planning; 2) the City's commitment in continuing its pursuit of economic development; and 3) the City's continued commitment in promoting quality urban design as a means to make Irwindale a more desirable place to live, work, and invest.

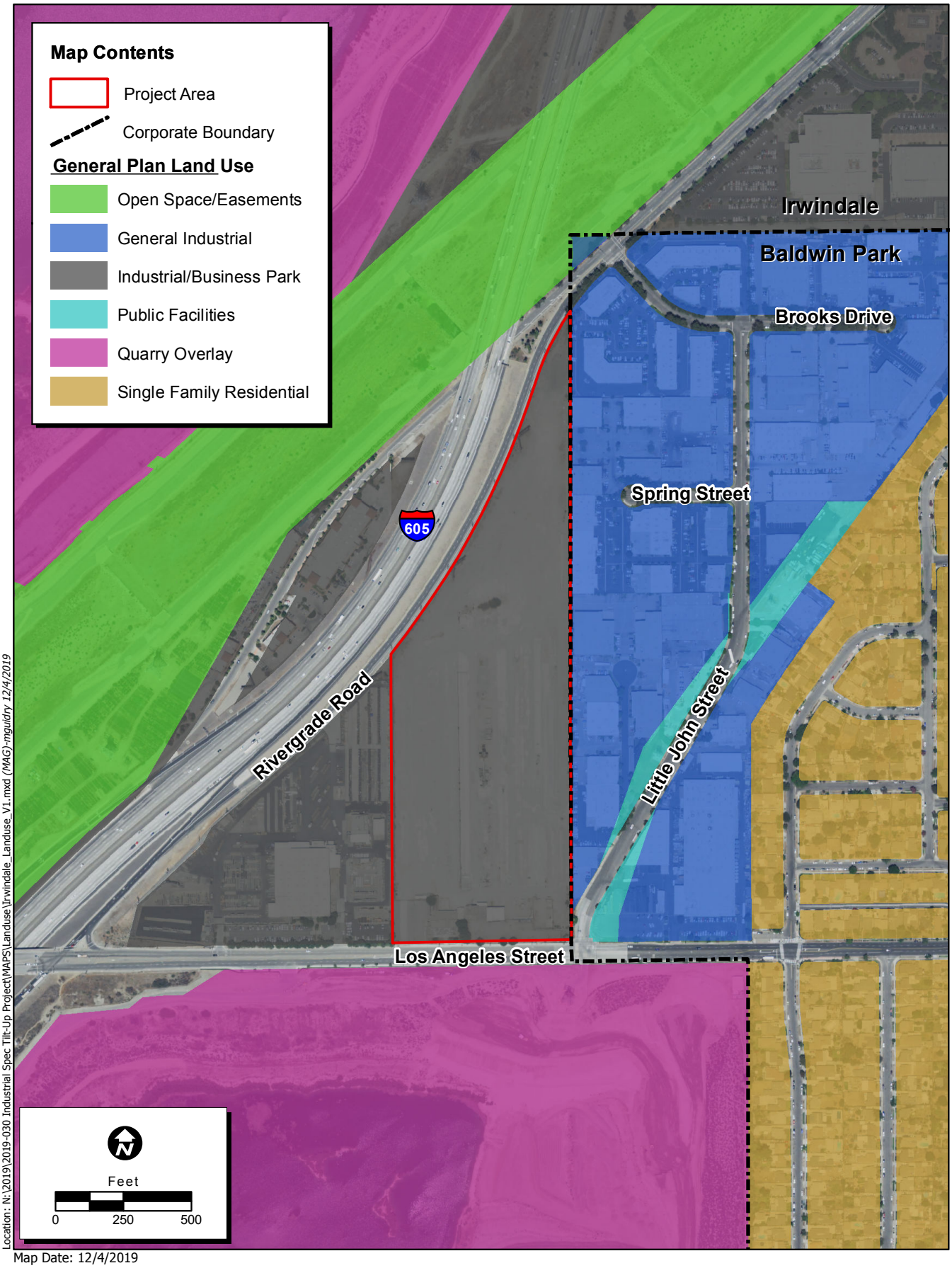
City of Irwindale Community and Industrial Design Guidelines

In 2009, the City adopted the Community and Industrial Design Guidelines to protect and preserve the City's Hispanic heritage while enriching the community's quality of life. These Guidelines ensure an aesthetically and functionally cohesive community through basic site and design principles, detailed design guidelines, and an explanation of the design review process (City of Irwindale 2009).

City of Irwindale Municipal Code

The project site is currently zoned M-2 (Heavy Manufacturing) with a land use designation of Industrial/Business Park. According to the City's Municipal Code, the M-2 zone allows for any use permitted in the M-1 (Light Manufacturing) zone, subject to some restrictions. Further, any use permitted in the C-M (Commercial Manufacturing) zone, subject to some restrictions, would be permitted within the M-1 zone. According to City Municipal Code Section 17.48, the C-M zone allows for "warehouses, wholesale businesses and storage buildings (no outside storage)." Therefore, the proposed warehouse would be a permitted use.

Should an alternative use be proposed that is not specifically permitted in the M-2, M-1 or C-M Zones, a conditional use permit (CUP) may be required. Approval of a CUP is a discretionary action that would be subject to further environmental review. A complete list of uses that require a CUP is available in the City Municipal Code Section 17.56.020.



Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Landuse\Irwindale_Landuse_V1.mxd (MAG)-mguidry 12/4/2019

Map Date: 12/4/2019
Base Source: NAIP 2018
Land Use Source: Cities of Irwindale, Baldwin Park, and Arcadia

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.7-1.
Existing General Plan Land Use Designations
2019-030 Irwindale Industrial Spec Tilt-Up Project

3.7.4 Impact Analysis

3.7.4.1 Thresholds of Significance

California Environmental Quality Act (CEQA) Guidelines Appendix G states that a project may have a significant effect on the environment if implementation would result in any of the following:

1) Would the project physically divide an established community?

2) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact 3.7.1: Physically Divide an Established Community

Threshold:	*Would the project physically divide an established community?*

As mentioned above, the proposed Project site is zoned for Heavy Manufacturing. The site had been occupied by a pre-cast concrete manufacturing company since 1967 and was vacated in 2017. Surrounding the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south.

The proposed Project is compatible with surrounding uses and shall be required to demonstrate compliance with established City Commercial and Industrial Design Guidelines. While the site is situated approximately 700 feet to the west of a residential neighborhood in the City of Baldwin Park, no part of the Project would extend beyond the existing site boundaries, and no part of the project would create a barrier within the established community. The presence of a new industrial warehouse development would not physically hinder or disrupt the continuing operation of any surrounding land uses.

For these reasons, **no impact would occur.**

Impact 3.7.2: Potential Conflicts with Applicable Land Use Plans and Policies Adopted for Mitigating Environmental Impacts

Threshold:	*Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*

The proposed Project site is located in an area designated Industrial/Business Park and zoned M-2 Heavy Manufacturing by the City of Irwindale General Plan (2008). According to the General Plan, typical land uses and/or developments that occur within areas designated as Industrial/Business Park consist of light industry, heavy industry, and distribution. This type of development is "usually well landscaped, provides abundant parking, and a uniform architectural design theme. These attractive developments typically include office, manufacturing, and warehousing uses" (City of Irwindale 2008). The proposed Project would demolish several existing buildings and ancillary structures associated with a former concrete

manufacturing business and construct a light industrial/warehouse building and associated parking, utilities, and landscaping. As such, the proposed warehouse building is consistent with the existing pattern of industrial land uses in the surrounding area.

The existing land uses in the vicinity consist of commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south. Construction of a warehouse building to replace the existing structures would be consistent with the existing pattern of development within the project site vicinity. According to the General Plan, the maximum floor to area ratio (FAR) for the Industrial/Business category is 1.0. The FAR for the proposed Project is approximately 0.49 (528,710 sf of total building area/1,083,772.8 sf site area).

Consistency with the applicable policies identified in the General Plan Community Development Element policies is provided in Table 3.7-1.

Table 3.7-1: Consistency with the City of Irwindale General Plan

City of Irwindale General Plan Policy	Project Consistency Analysis
Land Use Planning	
Community Development Element Policy 1. The City of Irwindale, through continued comprehensive land use planning, will strive to preserve the overall mix of land uses and development in the community.	**Consistent** – The proposed Project would establish an industrial warehouse at the site of a vacant warehouse building, within an existing and established industrial/business park area. As described throughout this section, the proposed warehouse is consistent with the industrial/business park land use designation of the project site. As such, the Project would contribute to the preservation of the overall mix of land uses in the City.
Community Development Element Policy 2. The City of Irwindale will continue to plan for the transition of the quarries located within the City to other land uses.	**Consistent** – The proposed Project is not located on the site of a quarry. However, it is located directly north of the existing Vulcan Durbin Quarry. The proposed warehouse use for the project site would not interfere with the current operation of the quarry, and it would be consistent with the planned land uses that are anticipated to be developed at the site of the quarry in the future. As such, the proposed project would not preclude the City from planning for the transition of the Vulcan Durbin Quarry to other land uses.
Community Development Element Policy 3. The City of Irwindale will continue to ensure that the type, location, and intensity of all new development and intensified developments adhere to the requirements that are specified for their particular land use category in the General Plan.	**Consistent** – The proposed Project is consistent with the Industrial/Business Park land use designation that has been applied to the project site. The proposed warehouse is an allowable use within the M-2 Heavy Manufacturing Zone.
Community Development Element Policy 5. The City of Irwindale will continue to promote comprehensive development consistent with this General Plan as opposed to piecemeal and incremental planning.	**Consistent** – The proposed Project is consistent with the General Plan land use designation of the project site and with the land use policies, as demonstrated throughout this section. The proposed Project is located within an existing industrial/business park area and is consistent with the land use designation that has been applied to this area.
Economic Development	

Table 3.7-1: Consistency with the City of Irwindale General Plan

City of Irwindale General Plan Policy	Project Consistency Analysis
Community Development Element Policy 7. The City of Irwindale will continue to promote economic development through the use of redevelopment.	**Consistent** – The project site consists of a former hollow core concrete manufacturing business. The proposed Project would redevelop this underutilized site with an industrial warehouse that would provide employment for the City and surrounding communities. As such, the proposed project would support the City's promotion of economic development through redevelopment projects.
Community Development Element Policy 9. The City of Irwindale will strive to ensure that future development, supported in whole or part through redevelopment, is fiscally sound.	**Consistent** – The proposed warehouse would be constructed, operated, and maintained by Duke Realty, a real estate investment trust. The project is considered to be fiscally sound.
Community Development Element Policy 10. The City of Irwindale will promote development that will benefit the community as a whole in terms of both jobs and revenue generation.	**Consistent** – While the Project tenant has not yet been identified, the industrial/warehouse project would create employment and revenue at a site that is currently vacant.
Urban Design	
Community Development Element Policy 12. The City of Irwindale will continue to promote quality design in the review and approval of commercial and industrial development through the application of the commercial and industrial design guidelines.	**Consistent** – The proposed Project would be consistent with the Commercial and Industrial Design Guidelines. The Project site plans and design would be reviewed and approved by the City prior to project implementation to ensure Project consistency with industrial design standards.
Community Development Element Policy 13. The City of Irwindale will continue to employ a design theme in the review of future commercial and industrial development and in the rehabilitation of existing commercial and industrial uses.	**Consistent** – As described above in the consistency analysis for Policy 12, the Project would be subject to site plan and design review. As such, the City would be able to employ a design theme in their review of the project. The Project would be consistent with the City's Design Guidelines that have been developed for commercial and industrial uses.
Community Development Element Policy 14. The City of Irwindale will continue to promote property maintenance in all areas of the City.	**Consistent** – Once developed, the proposed warehouse would be maintained by the applicant/tenant(s) in accordance with City requirements.
Community Development Element Policy 16. The City of Irwindale will continue to encourage a balance of commercial uses to avoid an overconcentration of uses to best serve the residents, employee population, and business community.	**Consistent** – The proposed Project would implement an industrial warehouse use within an existing industrial/business park area consistent with the City's General Plan.

Source: City of Irwindale General Plan, 2008.

Commercial and Industrial Design Guidelines Consistency

The City's Commercial and Industrial Design Guidelines establish design principles, detailed design guidelines, and a design review process to ensure that commercial and industrial projects within the City contribute to an aesthetically and functionally cohesive community. These provisions are designed to minimize land use conflicts and avoid or mitigate environmental effects.

The Project is designed for an industrial warehouse use. The Project will be required to conform with the City's Commercial & Industrial Design Guidelines, and the provisions of the Site Plan and Design Review Permit to address the site configuration, design, location, and impact of the proposed use and compliance with established Zoning Code standards.

Zoning Ordinance Consistency

The City of Irwindale would review all project plans, including site plans design plans, landscape plans, and wet and dry utility plans, for consistency with the City's Zoning Ordinance. The M-2 zone does not have a maximum height limit; as such, the proposed buildings heights would not conflict with the zoning ordinance. The proposed Project would be subject to the regulations established in Chapter 17.56 of the Municipal Code and would comply with those regulations. Because a tenant has not yet been identified to occupy the warehouse, the Project may require a CUP upon project approval. The CUP mechanism is designed in part to provide additional assurance that particular uses are conditioned to avoid or mitigate a potential environmental effect. Such uses requiring a CUP are described in Section 3.7.3. Should an alternative use be proposed that is not specifically permitted in the M-2, M-1 or C-M Zones, a CUP may be required. Approval of a CUP is a discretionary action that would be subject to further environmental review. However, as the Project is designed to support an industrial warehouse use, many of the heavy manufacturing uses that would otherwise require a CUP are not feasible or practical alternatives for the Project design. Additionally, new construction would require the approval of a Site Plan and Design Review (DA).

For the reasons described above, the Project would not conflict with land use plans, policies or regulations and the impact would be **less than significant.**

3.7.5 Cumulative Impacts

Threshold:	*Would the proposed project, when considered together with other development in the city and region, result in a significant conflict with an applicable land use plan adopted for the purpose of avoiding or mitigating an environmental effect?*

The primary objectives of the General Plan's Community Development Element are to assist in the management of future growth, to improve the City's physical appearance, and to minimize potential land use conflicts. According to the General Plan, many of the City's larger mining properties available for residential, commercial, and industrial development will be available for redevelopment in the next 10 to 15 years. The City anticipates that these properties will attract new businesses and support job growth locally and regionally (City of Irwindale 2008). SCAG predicts that there will be 500 households and 21,500 jobs in Irwindale by 2040 (SCAG 2015). As the proposed Project is consistent with the City's General Plan land use designation for the site and aligns with the City's development goals, policies, and objectives to accommodate future growth, the proposed Project would not contribute to an adverse cumulative effect. The City of Irwindale will ensure that the rate of residential growth can be accommodated in light of the City's physical and economic constraints and that this growth can be served by public services and infrastructure. Therefore, cumulative impacts from development of the proposed Project would be **less than significant.**

3.7.6 Mitigation Measures

No mitigation is required.

3.7.7 Level of Significance after Mitigation

No mitigation measures are necessary and impacts would be less than significant.

3.8 Noise

3.8.1 Introduction

This section describes the existing noise conditions and potential Project noise impacts on the site and surrounding areas. Descriptions and analysis are based on information contained in the Noise Impact Assessment prepared in November 2019 by ECORP (Appendix I). The assessment was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the City of Irwindale General Plan Noise Element and Municipal Code, the City of Baldwin Park Municipal Code, and the City of Arcadia Noise Standards.

3.8.2 Environmental Setting

3.8.2.1 Fundamentals of Sound and Environmental Noise

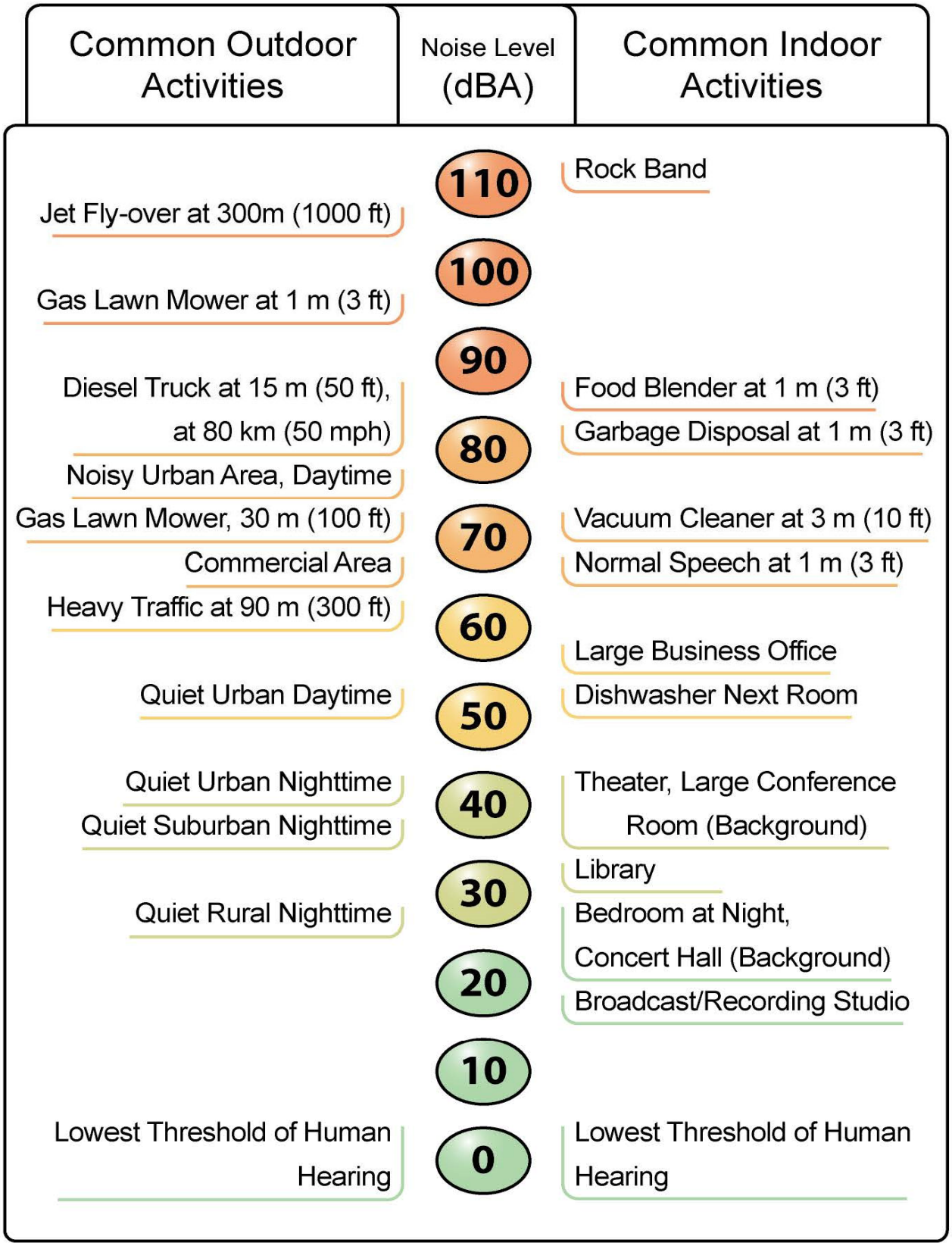
Addition of Decibels

The decibel (dB) scale is logarithmic, not linear; therefore, sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Typical noise levels associated with common noise sources are depicted in Figure 3.8-1. Common Noise Levels.

Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed (FHWA 2011).



Source: California Department of Transportation (Caltrans) 2012

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3.8-1. Common Noise Levels

2019-030 Irwindale Industrial Spec Tilt-Up Project

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about 5 dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. [WEAL] 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the "line of sight" between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend length-wise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL (Community Noise Equivalent Level) are measures of community noise. Each is applicable to this analysis and defined in Table 3.8-1.

Table 3.8-1 Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.

Table 3.8-1 Common Acoustical Descriptors

Descriptor	Definition
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level, CNEL	A 24-hour average L_{eq} with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	*That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.*

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5 dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. For ground vehicles, a noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance.

3.8.2.2 Fundamentals of Environmental Groundborne Vibration

Vibration Sources and Characteristics

Sources of vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared

amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Vibration Effects

Table 3.8-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying.

Table 3.8-2 Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	*98–104*	*Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges*	*Architectural damage and possibly minor structural damage*

Source: Caltrans 2004

3.8.2.3 Existing Ambient Noise Environment

The noise environment in the Proposed Project area is impacted by various noise sources. Mobile sources of noise, especially cars and trucks traveling on I-605 and Los Angeles Street, are the most common and significant sources of noise in Project area. Other sources of noise are the various land uses (i.e., residential, commercial and institutional) throughout the area that generate stationary-source noise. The Project site is located outside of any airport land use plan. Furthermore, the Project site is located beyond two miles from any airport; the San Gabriel Airport is the nearest airport to the Project site, located approximately three miles to the southwest).

The Project site does not currently support any industrial operations. The site surface is compacted with residual areas of concrete and several vacant buildings at the southern portion of the site associated with the prior industrial use. The site is surrounded by a mix of commercial, industrial, residential and undeveloped land uses. In order to quantify existing ambient noise levels in the Project area, Short-term noise measurements conducted in June 2019 were representative of typical existing noise exposure within and immediately adjacent to the Project site. The average noise levels and sources of noise measured at each location are listed in in Table 3.8-3.

Table 3.8-3 Existing (Baseline) Noise Measurements

Location Number	Location	Leq dBA	Lmin dBA	Lmax dBA	Time
1	On Los Angeles Street, adjacent to the Project site.	77.8	58.2	94.2	2:01 p.m.-2:11 p.m.
2	On Los Angles Street, south of the nearest residence.	71.2	53.3	87.4	2:23 p.m.-2:33 p.m.
3	In neighborhood east of the Project site along Hornbrook Avenue	63.4	48.8	87.2	2:42 p.m.-2:52 p.m.
4	Along Center Street just north of Los Angeles Street, within the neighborhoods adjacent to the Project site.	61.6	48.3	81.3	3:03 p.m.-3:13 p.m.

Source: Measurements were taken by ECORP with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See Attachment A for noise measurement outputs.

Ambient recorded noise levels range from 61.6 to 77.8 dBA near the Project site. The most common noise in the Project vicinity is produced by automotive vehicles (e.g., cars, trucks, buses, motorcycles). Traffic along I-605 and Los Angeles Street produces a sound level that remains relatively constant and is part of the Project Area's minimum ambient noise level. Vehicular noise varies with the volume, speed and type of traffic. Slower traffic produces less noise than fast-moving traffic. Trucks typically generate more noise than cars. Infrequent or intermittent noise also is associated with vehicles, including sirens, vehicle alarms, slamming of doors, trains, garbage and construction vehicle activity and honking of horns. These noises add to urban noise and are regulated by a variety of agencies.

3.8.2.4 Existing Roadway Noise Levels

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity using the FHWA Highway Traffic Noise Prediction Model (FHWA-RD-77-108). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average daily noise levels along the roadway segments that impact sensitive noise receptors are presented in Table 3.8-4.

Table 3.8-4 Existing (Baseline) Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway
Rivergrade Road		
South of Arrow Highway	Residential & Industrial	49.6
Interstate 605		
Southbound 605	Residential & Commercial	65.4
Lower Azusa Road		
West of Rivergrade Road	Residential & Commercial	58.3
Los Angeles Street		
East of Little John Street	Residential	62.4

Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KOA Traffic Engineers (2019).

As shown, the existing traffic-generated noise level on Project-vicinity roadways currently ranges from 49.6 to 65.4 dBA CNEL. As previously described, CNEL is 24-hour average noise level with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively.

3.8.3 Regulatory Setting

Federal

Occupational Safety and Health Act of 1970

The Federal OSHA regulates on-site noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an 8-hour work shift (29 Code of Regulations [CFR] 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

State

State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

State Office of Planning and Research Noise Element Guidelines

The State OPR Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a land use compatibility table (Table 3.8-5) that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

Table 3.8-5 Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure (L_{dn} or CNEL, dBA)			
	Normally Acceptable	Conditionally Acceptable	Normally Unacceptable	Clearly Unacceptable
Residential - Low Density, Single-Family, Duplex, Mobile Homes	50 – 60	55 - 70	70-75	75-85
Residential - Multiple Family	50 – 65	60 - 70	70 – 75	70 - 85
Transient Lodging - Motel, Hotels	50 – 65	60 - 70	70 – 80	80 - 85
Schools, Libraries, Churches, Hospitals, Nursing Homes	50 – 70	60 - 70	70 – 80	80 - 85
Auditoriums, Concert Halls, Amphitheaters	NA	50 - 70	NA	65 - 85
Sports Arenas, Outdoor Spectator Sports	NA	50 - 75	NA	70 - 85
Playgrounds, Neighborhood Parks	50 – 70	NA	67.5 – 75	72.5 - 85
Golf Courses, Riding Stables, Water Recreation, Cemeteries	50 – 70	NA	70 – 80	80 - 85
Office Buildings, Business Commercial and Professional	50 – 70	67.5 - 77.5	75 – 85	NA
Industrial, Manufacturing, Utilities, Agriculture	50 – 75	70 - 80	75 – 85	NA

Source: OPR, California, General Plan Guidelines, October 2003.
Notes:
NA: Not Applicable; L_{dn}: average day/night sound level; CNEL: Community Noise Equivalent Level

Normally Acceptable - Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.

Conditionally Acceptable - New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.

Normally Unacceptable - New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.

Clearly Unacceptable – New construction or development should generally not be undertaken.

Local

City of Irwindale General Plan

The City of Irwindale General Plan uses the state's General Plan Guidelines for land use and noise compatibility in identifying noise-sensitive land uses. These provide a guide for compatibility of noise sensitive land uses in areas subject to noise. For instance, single-family residential uses are normally unacceptable in areas exceeding 70 dBA CNEL; though conditionally acceptable in areas experiencing noise levels between 55-70 dBA CNEL and always acceptable in areas experience noise levels less than 55 dBA CNEL. Commercial/professional office buildings and industrial land uses are normally unacceptable in areas exceeding 75 dBA CNEL; conditionally acceptable in areas experiencing noise levels within 67 to 78 dBA CNEL, and acceptable in areas with noise levels less than 67 dBA CNEL.

City of Irwindale Municipal Code

The City's Municipal Code (Chapter 9.28) regulates noise from all sources, both stationary and mobile. These regulations, shown in Table 3.8-6, provide a basis for assessing the compatibility of developments on the ambient noise environment. Any noise which exceeds the ambient or the ambient base level set forth below, whichever is greater, by more than ten dB when measured at the property line would constitute an impact.

Table 3.8-6. City of Irwindale Ambient Base Noise Levels - Proof of Impact

Zone	Ambient Base Noise Level	
	10:00 p.m. to 7:00 a.m.	7:00 a.m. to 10:00 p.m.
Residential	45	50
Commercial	50	55
Industrial	60	70

Source: City of Irwindale Municipal Code

The City's Municipal Code exempts construction noise from all noise standards, provided that construction is limited between the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday and is conducted with City permit. Construction noise occurring on Sundays or federal holidays is prohibited. Construction-related noise that occurs as a result of construction activities adhering to these daytime restrictions is deemed to comply with the City Municipal Code.

City of Baldwin Park Municipal Code

The City of Baldwin Park city limit is directly across Little John Street, east of the Project site. There are sensitive noise receptors consisting of single-family residences located within the City of Baldwin Park near the Project site. Baldwin Park Municipal Code Chapter 153, *Noise,* regulates noise. Baldwin Park Noise regulations are shown in Table 3.8-7.

Table 3.8-7. City of Baldwin Park Exterior Noise Standards

Zone	Allowable Noise Level (dBA)		
Residential	7:00 a.m. – 7:00 p.m. (Day)	7:00 p.m. – 10:00 p.m. (Evening)	10:00 p.m. – 7:00 a.m. (Night)
	55	50	45
Nonresidential Uses			
Commercial	7:00 a.m. – 10:00 p.m. (Day and evening)	7:00 p.m. – 7:00 a.m. (Night)	
	65	55	
Industrial	Anytime	65	

Source: City of Baldwin Park Municipal Code

The City of Baldwin Park Municipal Code Section 130.37, *Special Noise Sources*, exempts noise from construction, provided that construction is limited between the hours of 7:00 a.m. to 7:00 p.m.

City of Arcadia General Plan

The City of Arcadia's General Plan Noise Element is intended to minimize adverse noise impacts on residence and to preserve a quality noise environment. The Nosie Element recognizes that transportation is the dominant source of noise in the City and provides noise standards for new development impacted by transportation noise sources. These standards are presented in Table 3.8-8.

Table 3.8-8 City of Arcadia Interior/Exterior Noise Standards

Land Use	Maximum Exterior Noise Level	Maximum Interior Noise Level
Residential: Rural, Single-family and Multifamily	65 dBA CNEL	45 dBA CNEL
Schools		
Classroom	70 dBA CNEL	45 dBA leq
Playground	70 dBA CNEL	-
Libraries	-	45 dBA
Hospitals/ Convalescent Facilities		
Sleeping Areas	65 dBA CNEL	45 dBA CNEL
Living Areas	-	50 dBA Leq
Reception, Office	-	50 dBA Leq
Places of Worship	65 dBA CNEL	45 dBA L_{eq}
Open Space/ Recreation		
Wildlife Habitat	60 dBA CNEL	-
Passive Recreation Areas	65 dBA CNEL	-
Active Recreation Areas	70 dBA CNEL	-
Commercial and Business Park		
Office	-	55 dBA L_{eq}
Restaurant, Retail, Service	-	65 dBA L_{eq}
Warehousing/ Industrial	-	70 dBA L_{eq}

Source: City of Arcadia General Plan

3.8.4 Impact Analysis

3.8.4.1 Thresholds of Significance

The impact analysis is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. A significant noise-related impact would occur if the Project would result in:

1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2) Generation of excessive groundborne vibration or groundborne noise levels.

3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

3.8.4.2 Methodology

This analysis of the existing and future noise environments is based on noise prediction modeling and empirical observations. Predicted construction noise levels were calculated utilizing the FHWA's Roadway Construction Model (2008). Transportation-source noise levels in the Project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). For Project operations the model was updated to reflect the anticipated amount of medium-duty and heavy-duty trucks generated by the Project, as supplied by KOA (2019), since these vehicles produce more noise than the average vehicle. On-site stationary source noise levels have been calculated with the SoundPLAN 3D noise model. Groundborne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical groundborne vibration levels associated with construction equipment.

For purposes of this analysis, the City of Irwindale, Baldwin Park and Arcadia numeric noise thresholds were used for evaluation of Project-related noise impacts. Consistent with the City of Irwindale standards, in the instance that the existing ambient noise levels already exceed the ambient base noise level, an increase of more than 10 dBA over the existing ambient noise level is considered significant. The cities of Baldwin Park and Arcadia do not provide guidance for determining a significant Project-related noise impact when the existing ambient noise levels already exceed the significance standard without the Project. As previously described, a change in level of at least 5 dBA is required before any noticeable change in community response would be expected. Therefore, in the case that the existing ambient noise levels already exceed the applicable numeric noise threshold within the cities of Baldwin Park and/or Arcadia, an increase of more than 5 dBA over the existing ambient noise level will be considered significant.

3.8.4.3 Project Impact Analysis

Impact 3.8.1 Project Construction and Operational Noise

Threshold:	*Would the Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?*

Project Construction Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for on-site construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction

equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect residences in the vicinity of the construction site. As previously stated, the closest residences are located adjacent to the eastern boundary of the Project site, approximately 0.13 mile distant. It is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to Project sensitive receptors.

Noise levels associated with individual construction equipment types are summarized in Table 3.8-9.

Table 3.8-9 Typical Construction Equipment Noise Levels

Type of Equipment	Maximum Noise (L_{max}) at 50 Feet (dBA)	Maximum 8-Hour Noise (L_{eq}) at 50 Feet (dBA)
Crane	80.6	72.6
Dozer	81.7	77.7
Excavator	80.7	76.7
Generator	80.6	77.6
Grader	85.0	81.0
Other Equipment (greater than 5 horsepower)	85.0	82.0
Paver	77.2	74.2
Roller	80.0	73.0
Tractor	84.0	80.0
Dump Truck	76.5	72.5
Concrete Pump Truck	81.4	74.4
Welder	74.0	70.0

Source: FHWA, Roadway Construction Noise Model (FHWA-HEP-05-054), dated January 2008.
Note: Leq is the average acoustic energy content of noise for a stated period of time. Thus, the Leg of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or night, Lmax is the maximum and minimum A-weighted noise level during the measurement period.

The nearest noise-sensitive land uses consist of single-family residences 0.13 mile (686 feet) east of the Project site boundary. Based on the construction equipment noise levels listed in Table 3.8-9 and assuming an average noise attenuation rate of 6 dB per doubling of distance from the source, predicted maximum 8-hour noise levels at the nearest sensitive receptor would range from approximately 59.3 dBA L_{eq} to 47.3 dBA L_{eq}. As identified in Table 3.8-3, the existing baseline measurements conducted within this residential community (Measurement Locations #2 and #3), experiences ambient noise levels that already exceed these values (63.4 dBA to 71.2 dBA). Thus, temporary Project construction noise would typically be lower than noise levels currently experienced at these receptors.

Although the Project would occur in the City of Irwindale, the nearest sensitive receptors are located in the City of Baldwin Park. Neither the City of Irwindale nor the City of Baldwin Park promulgate a numeric threshold pertaining to noise associated with construction. Rather, both cities limit the time that construction can take place between the hours of 7:00 a.m. and 7:00 p.m. This is because construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Furthermore, the cities of Irwindale and Baldwin Park are developed communities where construction noise is generally considered commonplace and acceptable within the urban environment. Lastly, construction would occur throughout the Project site and would not be concentrated at one point. Therefore, noise associated with construction activities, as long as conducted within the permitted hours, would not exceed any noise standards.

For these reasons, Project construction noise impacts would be **less than significant.**

Project Operational Noise

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest noise-sensitive land uses consist of single-family residences located 0.13 mile east of the Project site.

Operational noise sources associated with the Proposed Project include mobile and stationary (i.e., mechanical equipment, warehouse operations) sources.

Operational Traffic Noise

Future traffic noise levels throughout the Project vicinity (i.e., vicinity roadway segments that traverse noise sensitive residential land uses) were modeled based on the traffic volumes identified by KOA (2019) to determine the noise levels along Project vicinity roadways. Table 3.8-10 shows the calculated off-site roadway noise levels under existing traffic levels compared to future buildout of the Project. The calculated noise levels as a result of the Project at affected sensitive land uses are compared to the noise standards in the City of Arcadia General Plan (see Table 3.8-8) for the segment of Lower Azusa Road west of I-605 and Rivergrade Road, and the City of Baldwin Park Municipal Code Noise Standards (see Table 3.8-7) for the segments on Rivergrade Road, south of Arrow Highway, Interstate 605, south of Lower Azusa Road, and Los Angeles Street, east of Little John Street and Interstate 605. In the case that the existing ambient noise levels already exceed the applicable numeric noise threshold within the cities of Baldwin Park and/or Arcadia, an increase of more than 5 dBA over the existing ambient noise level is considered significant.

Table 3.8-10. Existing Plus Project Conditions - Predicted Traffic Noise Levels

Roadway Segment[1]	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway		Noise Standard (dBA CNEL)[3]	Exceed Standard / Significant Impact?
		Existing Conditions	Existing + Project Conditions[2]		
Rivergrade Road					
South of Arrow Highway	Residential & Industrial (In the City of Baldwin Park)	49.6	49.6	55.0	**No**
Interstate 605					
South of Lower Azusa Road	Residential & Commercial (In the City of Baldwin Park)	65.4	66.2	70.5	**No**
Lower Azusa Road					
West of Rivergrade Road	Residential & Commercial (In the City of Arcadia)	58.3	58.3	65.0	**No**
Los Angeles Street					
East of Little John Street	Residential (In the City of Baldwin Park)	62.4	62.4	67.4	**No**

Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KOA 2019.

Note: [1]A total of 13 intersections were analyzed in the Traffic Impact Study; however, only roadway segments that impact sensitive receptors were included for the purposes of this analysis

[2]The percentage of medium-duty and heavy-duty trucks was updated to reflect the Project traffic fleet mix supplied by KOA, since medium-duty and heavy-duty trucks produce more noise than the average vehicle

[3]The roadway segment on Interstate 605, south of Lower Azusa Road and the segment on Los Angeles Street, east of Little John Street already generate noise levels in excess of City of Baldwin Park noise standards (55 dBA) without the Project. Therefore, in the case of these two segments, the Project significance threshold equates to an increase of more than 5 dBA over the existing ambient noise level.

As shown in Table 3.8-10, two Project roadway segments are already experiencing roadway noise that exceeds respective noise standards under existing conditions. Thus, Project-generated traffic noise for those two segments (Interstate 605, south of Lower Azusa Road and Los Angeles Street, east of Little John Street) is compared to a significance threshold of a contribution of more than 5 dBA over the existing ambient noise level. As shown, the Project would not contribute to an increase of noise levels more than 5 dBA on either of these Project vicinity roadway segments. Additionally, the other two Project roadway segments do not exceed respective noise standards. No applicable noise standards would be exceeded by Project traffic.

For these reasons, Project operational traffic noise impacts would be **less than significant.**

Operational Stationary Noise

The main stationary operational noise associated with the Project would be warehouse-related activity, such as trucks idling and maneuvering the site. Table 3.8-11 shows the predicted Project noise levels at the six locations in the Project vicinity. Four of these locations (1 – 4) are where the existing baseline noise measurements were taken, while the additional two locations (5 & 6) are the nearest buildings to the Project site, which house industrial operations. Figure 3.8-2. *Onsite Noise Source Propagation*, depicts the predicted noise levels in the Project vicinity from Project operations.

Table 3.8-11. Modeled Operational Noise Levels

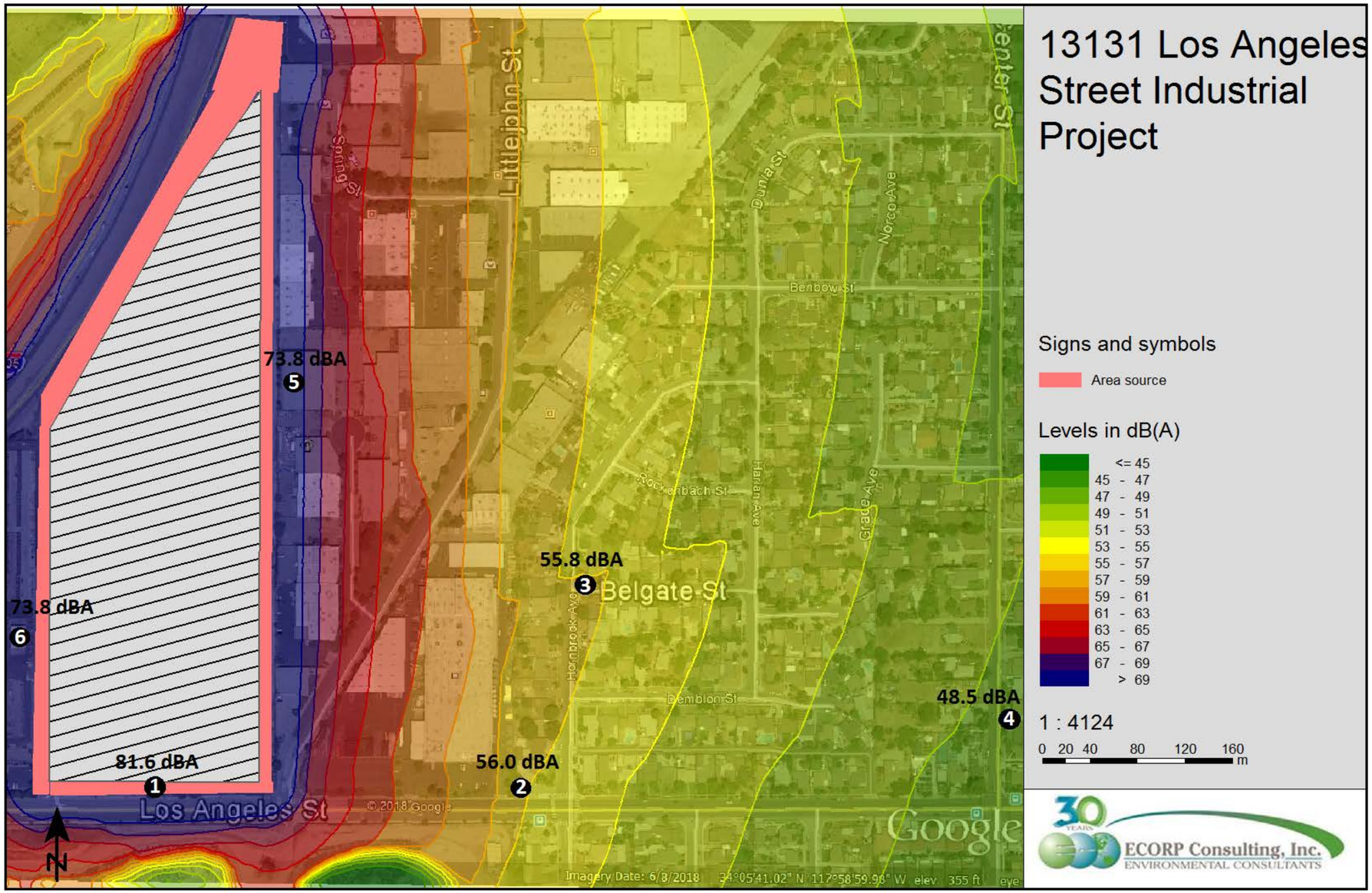
Site Location	Location	Baseline Noise Measurements (L_{eq} dBA)	Modeled Operational Noise Attributable to Project (L_{eq} dBA)	City Standards (dBA)[2]	Exceed Standard?
1	On Los Angeles Street, adjacent to the Project site. (**Irwindale**)	77.8	**81.6**	87.8	**No**
2	On Los Angles Street, south of the nearest residence. (**Baldwin Park**)	71.2	**56.0**	76.2	**No**
3	In neighborhood east of the Project site along Hornbrook Avenue. (**Baldwin Park**)	63.4	**55.8**	68.4	**No**
4	Along Center Street just north of Los Angeles Street, within the neighborhoods adjacent to the Project site. (**Baldwin Park**)	61.6	**48.5**	66.6	**No**
5	Industrial use east of the Project site. (**Irwindale**)	N/A	**73.8**	80.0	**No**
6	Industrial use west of the Project site. (**Irwindale**)	N/A	**73.8**	80.0	**No**

Source: Stationary source noise levels were modeled by ECORP Consulting using SoundPLAN 3D noise model. Refer to Attachment C for noise modeling assumptions and results.

Notes: [1]Source noise measurements identify 79 dBA for heavy-duty truck maneuvering per the San Jose Loading Dock Noise Study 2014. This reference measurement informed the SoundPLAN model to predict Project noise propagation.

[2]Consistent with the City of Irwindale standards, in the instance that the existing ambient noise levels already exceed the ambient base noise level in Irwindale, an increase of more than 10 dBA over the existing ambient noise level is considered significant. The cities of Baldwin Park and Arcadia do not provide guidance for determining a significant Project-related noise impact when the existing ambient noise levels already exceed the significance standard without the Project. In the case that the existing ambient noise levels already exceed the applicable numeric noise threshold within the cities of Baldwin Park and/or Arcadia, an increase of more than 5 dBA over the existing ambient noise level will be considered significant.

As depicted in Table 3.8-6 above, Irwindale's ambient base noise level for land uses zoned for 'Industrial' land uses, like that of the Project and the areas directly adjacent to the Project site, is 60 dBA from 10:00 p.m. to 7:00 a.m. (nighttime) and 70 dBA from 7:00 a.m. to 10:00 p.m. (daytime). Any noise which exceeds the ambient base level, set forth in Table 3.8-6, by more than ten dB when measured at the property line is deemed unacceptable. Project operations would take place between 7:00 a.m. and 6:00 p.m. and are thus compared to the City of Irwindale's daytime noise standard of ten dBA above the ambient base level of 70 dBA at the adjacent 'Industrial' land uses (i.e., 80 dBA). These nearby 'Industrial' land uses, located in the City of Irwindale, are represented as Location 5 and Location 6 in Table 3.8-11. The primary Project stationary source would be the movement of trucks on the Project site. Truck movements include including truck approach, backup alarms, idling, air brake discharge, engine ignition, and truck pull away. Project noise levels at Location 5 and Location 6 have the potential to experience noise levels up to 73.8 dBA. Thus, Project operations would not exceed the ambient base level for 'Industrial' land uses, set forth in Table 3.8-6, by more than 10 dBA.



Map Date: *6/27/2019*
Photo (or Base) Source: *SoundPLAN*

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Figure 3.8-2. Onsite Noise Source Propogation

The City of Baldwin Park, located east of the Project site, promulgates noise standards in Chapter 153 of its Municipal Code. As depicted in Table 3.8-7, the City of Baldwin Park regulates exterior noise standards for various land uses. Areas zoned 'Residential', such as the land uses located east of the Project site, have a daytime standard of 55 dBA. As shown in Table 3.8-11 above, Project-generated noise levels at the nearest residence, Location 2, have the potential to reach up to 56 dBA during Project operations. Project-generated noise levels at the neighborhood east of the Project site along Hornbrook Avenue (Location 3) have the potential to reach 55.8 dBA. These values exceed the day, evening and night noise standards for residences. However, the existing baseline noise levels at Location 2 were measured as 71.2 dBA and the existing baseline noise levels at Location 3 were measured at 63.4 dBA. As such, these residences already experience noise levels in excess of City of Baldwin Park standards. As previously described, where existing ambient noise levels already exceed the numeric noise threshold within Baldwin Park, an increase of more than 5 dBA over the existing ambient noise level is considered significant. As shown in Table 3.8-11, on-site Project noise would not surpass the noise levels that are already experienced in at Locations 2 and 3. The same is the case at the Baldwin Park residences represented at Location 4. Therefore, Project noise would not result in an increase of 5 dBA or more over the existing ambient noise level currently experienced.

For these reasons, Project operational stationary noise impacts would be **less than significant.**

Impact 3.8.2 Groundborne Vibration or Groundborne Noise

Threshold:	*Would the project result in generation of excessive groundborne vibration or groundborne noise levels?*

Groundborne Vibration During Construction

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would be primarily associated with short-term construction-related activities. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would not be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in Table 3.8-12.

Table 3.8-12. Representative Vibration Source Levels for Construction Equipment

Equipment Type	Peak Particle Velocity at 20 Feet (inches per second)
Large Bulldozer	0.123
Caisson Drilling	0.123
Loaded Trucks	0.105
Rock Breaker	0.082
Jackhammer	0.048
Small Bulldozer/Tractor	0.004

Source: FTA 2018; Caltrans 2004

The City of Irwindale does not regulate vibrations associated with construction. As a result, the Caltrans's (2004) recommended standard of 0.2 inches per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings.

Project construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest offsite structure. The nearest structures of concern to the construction site are associated with an 'Industrial' use located approximately 20 feet to the east. Based on the vibration levels presented in Table 3.8-12, ground vibration generated by heavy-duty equipment would not exceed approximately 0.123 inches per second PPV at 20 feet. Thus, the structure located at 20 feet would not be negatively affected. Predicted vibration levels at the nearest structures would not exceed recommended criteria.

For these reasons, Project construction groundborne vibration and noise impacts would be **less than significant.**

Groundborne Vibration During Operations

Project operations would not include the use of any stationary equipment that would result in excessive vibration levels. While the Project would accommodate heavy-duty trucks, these vehicles can only generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances. Therefore, the Project would result in negligible groundborne vibration impacts during operations.

For these reasons, Project groundborne vibration impacts during operations would be **less than significant.**

Impact 3.8.3 Exposure of People to Noise from Private Airstrip or Public Airport

Threshold 3:	*For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?*

The closest airport to the Proposed Project site is San Gabriel Airport, located approximately 2.6 miles to the southwest. The Project site is not addressed in the airport's land use plan. There are no private airstrips in the vicinity of the Project. The Project would not expose people working in the Proposed Project area to excessive noise levels. **No impact would occur.**

3.8.5 Cumulative Impact Analysis

3.8.5.1 Cumulative Construction Noise Impact

Construction activities associated with the Proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas immediately adjacent to the construction site. The nearest Related Projects [CEQA 15355(b)] for purposes of cumulative impact evaluation of construction impacts are approximately one-mile away from the Project site (Table 3.0-1 Related Area Projects; Figure 3.0-1 Location of Related Area Projects). Construction noise for the Proposed Project was determined to be less than significant following compliance with the City of Irwindale Municipal Code and the City of Baldwin Park's Municipal Code. Though the vicinity of the Project site is essentially developed with existing uses, additional development or redevelopment in the immediate vicinity of the Project site during the Project construction time frame could result in elevated construction noise levels at sensitive receptors in the Project area. However, each project would be required to comply with the applicable city's Municipal Code limitations on construction. Therefore, the Project would not contribute to cumulative impacts during construction and **no impact would occur.**

3.8.5.2 Cumulative Traffic Source Noise Impact

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to operations of the Project and other projects in the vicinity. A project's contribution to a cumulative traffic noise increase could be considered significant when the combined effect exceeds the perception level (i.e., auditory level increase) threshold. The combined effect compares the "Cumulative Plus Project" condition to "Existing" conditions. This comparison accounts for the traffic noise increase generated by a project combined with the traffic noise increase generated by projects in the area. The incremental effect compares the "Cumulative Plus Project" condition to the "Cumulative No Project" condition.

The following combined effect and incremental effect criteria have been utilized to evaluate the overall effect of the cumulative noise increase.

Combined Effect

The cumulative with Project noise level ("Cumulative Plus Project") would cause a significant cumulative impact if a 3.0 dB increase over Existing Conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use. Although there may be a significant noise increase due to the Proposed Project in combination with other related projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the Proposed Project.

Incremental Effects

The "Cumulative Plus Project" causes a 1.0 dBA increase in noise over the "Cumulative No Project" noise level.

A significant impact would result only if *both* the combined and incremental effects criteria have been exceeded at a single roadway segment, since such would indicate that there is a significant noise increase due to the Proposed Project in combination with other related projects AND a significant portion of the noise increase is due to the Proposed Project. Noise by definition is a localized phenomenon and reduces as distance from the source increases. Consequently, only the Proposed Project and growth due to occur in the Project site's general vicinity would contribute to cumulative noise impacts. Table 3.8-13 lists the traffic noise effects along roadway segments in the Project vicinity for "Existing," "Cumulative No Project," and "Cumulative Plus Project," conditions, including incremental and net cumulative impacts.

Table 3.8-13. Cumulative Traffic Noise Scenario

Roadway Segment	Existing	Cumulative No Project	Cumulative Plus Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
	CNEL @ 100 Feet from Roadway Centerline	CNEL @ 100 Feet from Roadway Centerline	CNEL @ 100 Feet from Roadway Centerline	Difference in CNEL Between Existing and Cumulative + Project	Difference in CNEL Between Cumulative No Project and Cumulative + Project	
Rivergrade Road						
South of Arrow Highway	49.6	49.8	49.8	**0.2**	**0.0**	**No**
Interstate 605						
Southbound 605	65.4	65.8	66.5	**1.1**	**0.7**	**No**
Lower Azusa Road						
West of Rivergrade Road	58.3	58.5	58.6	**0.3**	**0.1**	**No**
Los Angeles Street						
East of Little John Street	62.4	62.4	62.4	**0.0**	**0.0**	**No**

Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KOA 2019.

Note: The percentage of medium duty and heavy-duty trucks is derived from the Traffic Impact Study (KOA 2019). Medium duty and heavy-duty trucks produce more noise than the average vehicle. Roadway segments analyzed are in the Project vicinity and traverse noise sensitive residential land uses.

No significant cumulative traffic noise impact would result on any of the Project vicinity roadway segments traversing noise sensitive residential land uses. Project-generated traffic noise would not exceed either the incremental effect threshold of a 1.0 dBA increase over the Cumulative No Project scenario, or the combined effect threshold of a 3.0 dBA increase over Existing Conditions. Therefore, no perceptible increase of traffic noise would occur as a result of the Cumulative Plus Project scenario.

For these reasons, cumulative traffic source noise impacts would be **less than significant.**

3.8.5.3 Cumulative Stationary Source Noise Impact

Long-term stationary noise sources associated with the development at the Project, combined with other cumulative projects could cause localized noise level increases. Noise levels associated with the Proposed Project and related cumulative projects together could result in higher noise levels than considered separately. Although the surrounding land uses are already experiencing levels above the City's noise standards, on-site noise sources associated with the Proposed Project would not increase noise levels above the current ambient noise environment and would not be increasing noise levels by more than 10 dBA in Irwindale or 5 dBA in either Arcadia or Baldwin Park. Therefore, the Project would not contribute to cumulative impacts during operations.

For these reasons, cumulative stationary source noise impacts would be **less than significant.**

3.8.6 Mitigation Measures

No mitigation measures are necessary.

3.8.6.1 Level of Significance After Mitigation

Less than significant impact.

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3.9 Transportation

3.9.1 Introduction

Information in this section is derived from the Traffic Impact Study prepared by KOA Corporation (2019) included in Appendix J. The proposed Project is an industrial building of 525,000 square feet in interior floor area. Access would be provided by site driveways on Los Angeles Street at the south side of the site and on Rivergrade Road at the northwest side of the site. The project tenants are not yet identified but are anticipated to be warehouse or light industrial land uses. The Project is anticipated to be completed and occupied in the year 2021.

3.9.2 Environmental Setting

Project Study Area

The project study includes the following 13 study intersections:

1. I-605 Southbound Off-ramp/Arrow Highway
2. I-605 Northbound On-ramp/Arrow Highway
3. Rivergrade Road/ Arrow Highway
4. Stewart Avenue/ Rivergrade Road
5. I-605 Southbound On-ramp/Live Oak Avenue
6. I-605 Northbound Off-ramps/Live Oak Avenue
7. Graham Access Road/ Live Oak Avenue
8. Rivergrade Road/Live Oak Avenue
9. Rivergrade Road/Commerce Drive
10. Rivergrade Road/Brooks Avenue
11. I-605 Southbound Ramps/Los Angeles Street
12. I-605 Northbound Ramps/Los Angeles Street
13. Little John Street/Los Angeles Street

A signal warrant analysis was conducted for the main/south site driveway on Los Angeles Street. Project-related impacts were also assessed at 12 mainline locations on the I-10, I-210 and I-605 freeways, and at eight ramp locations on the 605 freeway. The locations are listed below.

3.9.2.1 Mainline Locations

1. I-210 West of I-605
2. I-605 SB North of Arrow Hwy
3. I-605 SB Arrow Hwy to Live Oak

4. I-605 SB Live Oak to Lower Azusa
5. I-605 SB South of Lower Azusa
6. I-10 West of I-605
7. I-10 East of I-605
8. I-605 NB South of Lower Azusa
9. I-605 NB Lower Azusa to Live Oak
10. I-605 NB Live Oak to Arrow Highway
11. I-605 NB North of Arrow Highway
12. I-210 East of I-605

3.9.2.2 I-605 Ramp Locations

1. NB Off at Los Angeles Street
2. NB On from Los Angeles Street
3. NB Off at Live Oak avenue
4. NB On from Arrow Highway Eastbound
5. NB On from Arrow Highway Westbound
6. SB Off at Arrow Highway
7. SB On from Live Oak Avenue
8. SB Off at Lower Azusa Road
9. SB On from Lower Azusa Road

Figure 3.9-1 illustrates the locations of the study intersections. Details on the freeway LOS analysis are provided in Section 3.9.4.

3.9.2.3 Existing Roadway System

The key roadways within the study area are described here. The discussion is limited to specific roadways that traverse the study intersections and serve the Project site. Figure 3.9-1 illustrates the existing traffic controls and approach lane geometries at the study intersections.

Arrow Highway is classified, in the study area vicinity, as a Main Arterial Highway by the City of Irwindale General Plan. This roadway provides two travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 45 miles per hour.

Brooks Drive is classified as a Residential Roadway in the City of Baldwin Park General Plan. This roadway provides 1 travel lane in each direction. On-street parking is prohibited on both sides of the roadway west (or north) of Little John Street and permitted on both sides of the roadway east of Little John Street. The prima facie speed limit is 25 miles per hour.

Commerce Drive is classified as a Collector Street in the City of Irwindale General Plan. The roadway provides one lane of travel in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 40 miles per hour.

Little John Street is classified as a Residential Roadway in the City of Baldwin Park General Plan. This roadway provides one travel lane in each direction. On-street parking is permitted on the north half of the roadway (towards Brooks Drive) and prohibited on the south half (towards Los Angeles Street). The posted speed limit is 40 miles per hour.

Live Oak Avenue is classified by the Irwindale General Plan as a Major Highway east of the junction with Arrow Highway. This roadway generally provides two travel lanes in westbound direction and three lanes in the eastbound direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 45 miles per hour.

Los Angeles Street/Lower Azusa Road is classified as a Secondary Highway in the City of Irwindale General Plan and as a Collector/Industrial Roadway in the City of Baldwin Park General Plan. This roadway provides two travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 45 miles per hour.

Rivergrade Road is classified as a Secondary Highway in the City of Irwindale General Plan. The roadway provides two lanes of travel in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit ranges from 40 to 50 miles per hour.

Stewart Avenue is classified as a Collector Street in the Irwindale General Plan. This roadway provides two travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 30 miles per hour.

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Figure 3.9-1. Study Intersection Locations

2019-030 Irwindale Industrial Spec Tilt-Up Project

3.9.2.4 Existing Transit Service

The vicinity of the proposed Project site is served by bus transit lines operated by Foothill Transit. Table 3.9-1 provides a description of the service provided by these lines.

Table 3.9-1 – Existing Transit Service Summary

Agency	Line	From	To	Via	Peak Frequency
Foothill Transit	178	El Monte Bus Station	Puente Hills Mall	Valley Boulevard, Cogswell Road, Lower Azusa Road, Los Angeles Street, West Covina Parkway	28 minutes
Foothill Transit	492	El Monte Bus Station	Montclair Metrolink	Arrow Highway, Live Oak Avenue	19-20 minutes
Foothill Transit	272	Duarte	West Covina Parkway/California Avenue	Buena Vista Street, Arrow Highway, Rivergrade Road, Stewart Avenue, Baldwin Park Blvd	30 minutes

3.9.2.5 Existing Traffic Volumes

Vehicle turning movement counts were collected at the study intersections on April 10th and April 11th of 2019 from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. Counts included auto and truck counts, with the latter categorized by number of axles. Passenger Car Equivalency (PCE) factors were applied to the truck volumes based on categories of axle numbers – two, three, and four plus. Existing weekday a.m. peak-hour and p.m. peak-hour traffic turn movement volume count summaries are provided in Appendix J of this report.

3.9.2.6 Existing Intersection Level of Service

Based on the intersection lane configurations and the existing traffic volumes, volume-to-capacity ratios and average delay values and corresponding levels of service (LOS) were determined for each of the study intersections during the weekday a.m. and p.m. peak hours. Table 3.9-2 summarizes the volume-to-capacity ratios and LOS values for existing traffic conditions.

Table 3.9-2 – Study Intersection Existing Conditions

	Study Intersections	Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.134	**F**	0.620	B
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.723	C	0.625	B
4	Stewart Avenue/ Rivergrade Road	0.337	A	0.356	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.849	D	1.248	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	1081.6	**F**	606.9	**F**
7	Graham Access Road/ Live Oak Avenue	0.655	B	0.670	B
8	Rivergrade Road/Live Oak Avenue	0.649	B	0.961	**E**
9	Rivergrade Road/Commerce Drive*	24.1	C	25.1	D
10	Rivergrade Road/Brooks Avenue	0.475	A	0.370	A
11	I-605 Southbound Ramps/Los Angeles Street	0.788	C	0.796	C
12	I-605 Northbound Ramps/Los Angeles Street	0.913	**E**	0.916	**E**
13	Little John Street/Los Angeles Street	0.578	A	0.748	C

LOS = Level of Service

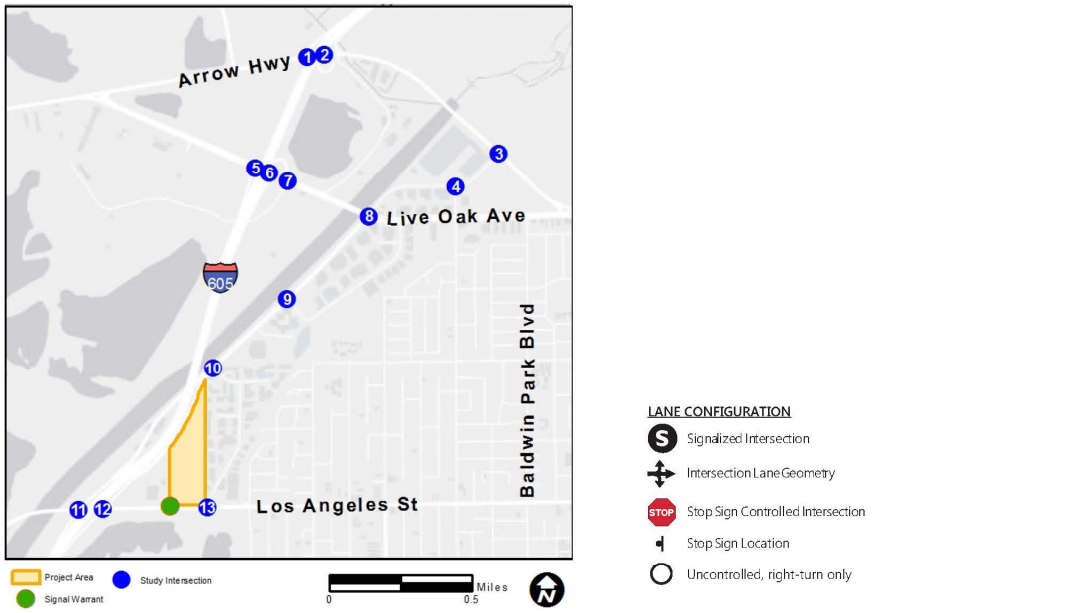
V/C= Volume to Capacity Ratio

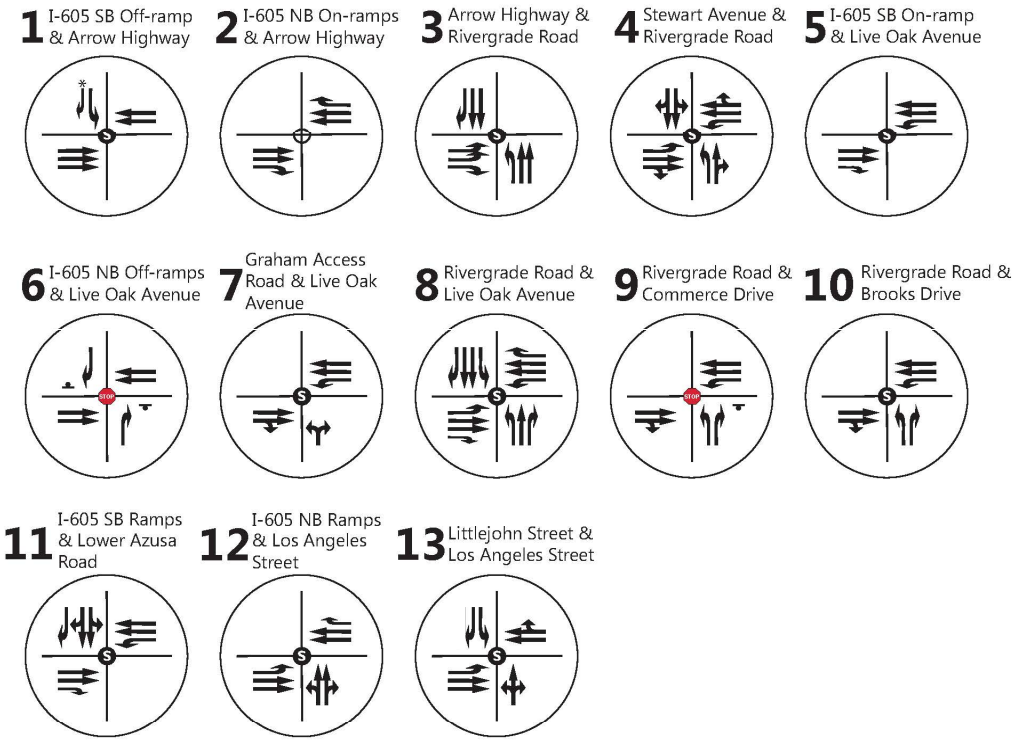
**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Eight of the 13 study intersections are currently operating at LOS D or better during the weekday a.m. and p.m. peak hours. The following intersections operate at LOS E or F during one or both peak periods:

- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Northbound Ramps/Los Angeles Street

Existing lane configurations are depicted in Figure 3.9-2. The existing traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 3.9-3.





* Small lanes are channelized

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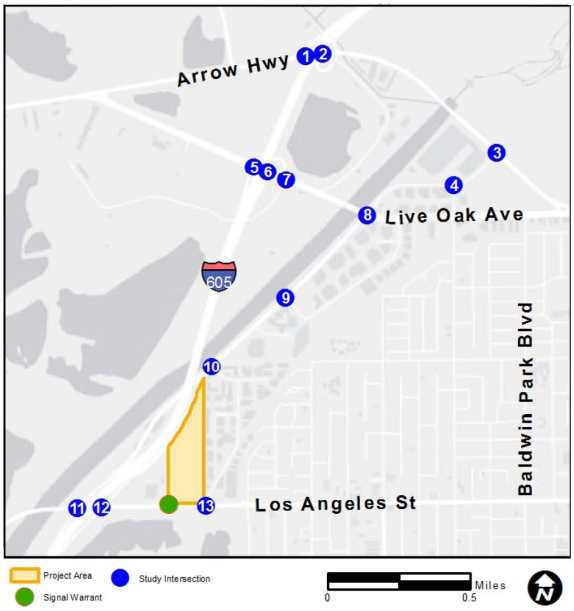
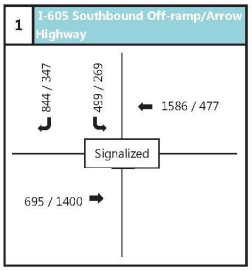
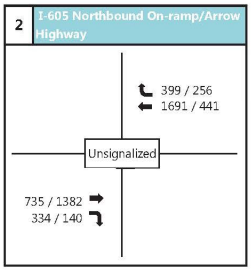
Figure 3.9-2. Existing Study Intersection Lane and Control Configurations

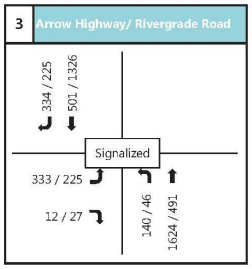
2019-030 Irwindale Industrial Spec Tilt-Up Project

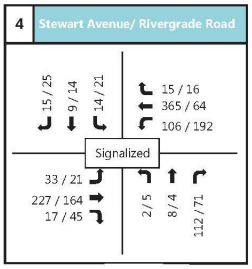


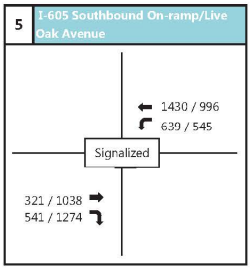
xx/xx AM/PM turning movement volumes

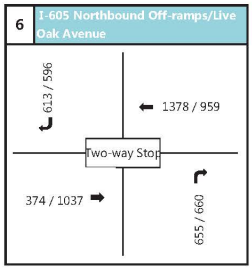


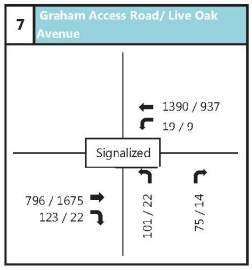


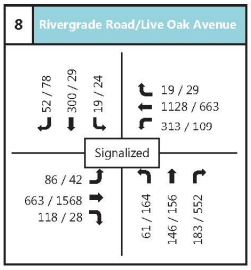


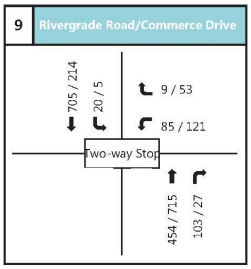


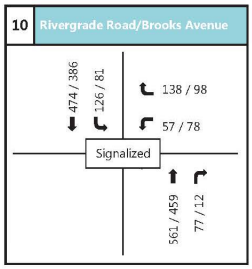


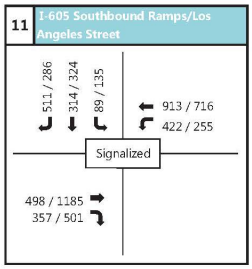


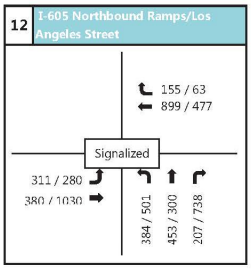












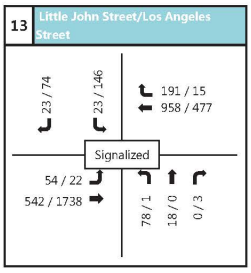


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Figure 3.9-3. Existing AM/PM Peak Hour Traffic Volumes

2019-030 Irwindale Industrial Spec Tilt-Up Project

3.9.3 Regulatory Setting

There are no applicable federal agency regulations that would apply to traffic for this Project.

State

SB-743

On September 27, 2013, California Governor Jerry Brown signed Senate Bill (SB) 743 into law, which creates a process to change the way that transportation impacts are analyzed under California Environmental Quality Act (CEQA). SB 743 requires that the Governor's Office of Planning and Research (OPR) amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated" (New Public Resources Code Section, 21099(b)(1)).

On August 6, 2014, OPR released for public review a preliminary discussion draft of changes to the CEQA Guidelines. The second set of guidelines was released on January 20, 2016, and recommends that transportation impacts under CEQA will be evaluated using VMT. Local jurisdictions will still be allowed to assess impacts using methodologies in addition to VMT. In 2018 the guidelines were officially adopted, providing jurisdictions with an opt-in period lasting until July 1, 2020 to update their respective guidance to comply and to incorporate required VMT thresholds into their CEQA-related transportation impact review for projects.

Under these updated CEQA Guideline changes, LOS would no longer be considered as a basis for determining significant impacts in many parts of California. Furthermore, parking impacts would also not be considered significant impacts under CEQA for select development projects within infill areas that are near frequent transit service. At this time, the City has not adopted new traffic impact study guidelines in accordance with SB 743, As such, this analysis is based on the City's current and existing traffic study guidelines, which use LOS and delay as a measure for significant transportation impacts under CEQA.

State of California Department of Transportation

Pursuant to the Caltrans *Guide for the Preparation of Traffic Impact Studies* (Caltrans 2002) and based on recent coordination with Caltrans, analyses of State highway facilities should be conducted when and if a proposed project is expected to add 50 or more peak hour trips in either direction on a freeway mainline segment or 10 or more peak hour trips to a freeway off-ramp location. Although the proposed project at build-out is not expected to generate 50 or more vehicle trips, during either the AM or PM peak commute hours, at any of the freeway mainline locations, analysis was prepared for mainline freeway segments in the project vicinity pursuant to Caltrans analysis methodologies. The proposed project is expected to add 10 or more vehicle trips during the AM and/or PM commute peak hours to some of the adjacent freeway ramp locations. Therefore, intersection analyses were prepared for Caltrans ramp study intersections in the project vicinity pursuant to Caltrans analysis methodologies.

Local

Los Angeles County Congestion Management Program

The City is subject to the Los Angeles County Congestion Management Plan (CMP). The Los Angeles County CMP was created statewide because of Proposition 111 and was implemented locally by the Los Angeles County Metropolitan Transportation Authority (Metro). The CMP for Los Angeles County requires that the traffic impact to be analyzed for individual development projects that may have regional significance. A specific system of arterial roadways plus all freeways comprise the CMP system. A total of 164 intersections are identified for monitoring on the system in Los Angeles County.

CMP Transportation Impact Analysis (TIA) Guidelines are provided in the 2010 CMP for Los Angeles County. According to these guidelines, an analysis of the effects that a project may have on the CMP system is conducted in the following instances:

- If the project is projected to add 50 or more vehicle trips during either AM or PM weekday peak hours to CMP arterial monitoring intersections, including freeway onramps or off-ramps.
- If the project is projected to add 150 or more trips in either direction during either the AM or PM weekday peak hours at CMP mainline freeway monitoring locations.

The proposed project was reviewed for its potential to trigger the above thresholds, which would then require the project to be further analyzed under the CMP. This review is summarized in Section 3.9.4.3, Impact Analysis--Congestion Management Program and Freeway Facility Impacts.

City of Irwindale General Plan Update

The Infrastructure Element of the City's General Plan Update includes the following programs and policies applicable to the proposed project:

- **Caltrans Coordination.** The City will coordinate efforts with Caltrans to upgrade area freeways. The purpose of this undertaking is to ensure that the City is fully appraised of roadway and facility improvement efforts in the early stages of planning and design. The City will continue to work with Caltrans and the Metro, as appropriate, and will request to be on all notification lists of future projects that may impact the City.
- **Environmental Review.** The City shall continue to evaluate the environmental impacts of new development and provide mitigation measures prior to development approval, as required by the CEQA. Environmental review shall be provided for major projects and those that will have a potential to adversely affect traffic in the City. Among those issues that may be addressed in the environmental analysis are traffic, parking, and circulation. In compliance with CEQA, the City shall also assign responsibilities for the verification of the implementation of mitigation measures. The City's environmental review procedures are currently in place.
- **Mitigation Fee/User Fee Study.** The City will explore strategies to ensure that the City's residents do not bear an undue burden associated with new development. The City will determine a reasonable and fair method of assessing new development for the cost of providing any

additional infrastructure required by the development. The first step of this program's implementation calls for the preparation of a mitigation fee strategy study to be initiated by the City Manager. The subsequent phases of this program will involve examining the current truck fees to ensure that the City is receiving its fair share of licensing fees, given the relatively high volumes of truck traffic in the City.

- **Signalization**. The City will strive to provide optimum signalization on major thoroughfares to maximize circulation efficiency, such as participation in a regional signalization program. City staff will outline both the need and strategy for improved signalization. Coordination with Caltrans, the Department of Public Works, Los Angeles County, and Metro will be emphasized.
- **I-605 Freeway Ramps**. The City will encourage the upgrade and construction of freeway ramps to and from the I-605 Freeway. Future uses and heavy demand in and around the I- 605 Freeway will benefit from these improvements.
- **Infrastructure Element Policy 4**. The City of Irwindale will strive to ensure that all new development implements its "fair-share" of infrastructure improvement to offset the potential adverse impacts associated with the additional traffic that will be generated by the new development.

Specific guidance for preparation of traffic studies is provided in the *Irwindale Traffic Study Guidelines* (August 2014).

3.9.4 Impact Analysis

3.9.4.1 Thresholds of Significance

The impact analysis is based on the following CEQA Guidelines Appendix G thresholds of significance. A significant transportation-related impact would occur if the Project would:

1) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

2) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

3) Substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?

4) Result in inadequate emergency access?

3.9.4.2 Methodology

Project Trip Generation

The trip generation of the project was calculated using nationally-accepted rates defined by the Institute of Transportation Engineers (ITE) –*Trip Generation (10th edition)*. The light industrial rate is the highest

rate in the larger industrial land use category within the ITE reference, and therefore the application of that rate is more conservative.

Given the site's industrial nature, the trip generation total distinguished between truck trips and passenger car/small commercial vehicle trips. The truck trip percentages (including the breakdown of trucks by number of axles) were taken from a 2003 Truck Trip Generation study conducted by the city of Fontana. Passenger Car Equivalent Rates were applied to the different truck axle categories to determine the amount of passenger car traffic equal to the generated truck traffic (given the trucks' larger size). The passenger car equivalent trips were added to the passenger car/small commercial vehicle trip total to derive the aggregate trip generation.

Credits for a former use at the site were then subtracted from the aggregate trip generation, as the site could potentially be used again with a similar use under current conditions. Information on the previous site use was compiled by the City of Irwindale, and as the use had primarily outdoor operations, floor area calculations would not be accurate. The number of employees that had been assigned to that operation was defined, which served as the basis for trip generation of the previous use. The resulting trip generation calculations were applied as a credit. The trip generation analysis is provided in Table 3.9-3. The proposed Project would generate 3,210 daily trips, including 450 vehicle trips during the a.m. peak hour (301 inbound trips and 149 outbound trips) and 406 vehicle trips during the p.m. peak hour (140 inbound trips and 266 outbound trips).

Table 3.9-3 – Project Vehicle Trip Generation

ITE Code	Land Use	Intensity	Units	Weekday						
				Daily	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Trip Generation Rates [1]										
110	General Light Industrial, Total	-	KSF	4.96	0.70			0.63		
140	Manufacturing, Total	-	Employees	2.47	0.37	74%	26%	0.33	39%	61%
Trip Generation Totals-New Use										
110	General Light Industrial, Total	525.000	KSF	2,604	368			331		
Trip Generation Rates Trucks [2]										
110	General Light Industrial, 2-axle trucks	-	Proportion[1]	0.08	0.08	38%	63%	0.08	67%	33%
110	General Light Industrial, 3-axle trucks	-		0.039	0.039	38%	63%	0.039	67%	33%
110	General Light Industrial, 4+-axle trucks	-		0.095	0.095	38%	63%	0.095	67%	33%
Truck Trips Non-Factored, Removed										
110	General Light Industrial, 2-axle trucks	525.000	KSF	208	29	11	18	26	17	9
110	General Light Industrial, 3-axle trucks	525.000	KSF	102	14	5	9	13	9	4
110	General Light Industrial, 4+-axle trucks	525.000	KSF	247	35	13	22	31	21	10
Truck Trips-Passenger Car Equivalents, Added										
110	General Light Industrial, 2-axle trucks	525.000	KSF	416	58	22	36	52	35	17
110	General Light Industrial, 3-axle trucks	525.000	KSF	255	35	13	22	33	22	11
110	General Light Industrial, 4+-axle trucks	525.000	KSF	741	105	39	66	93	62	31
Trip Generation Rates-Passenger and Small Commercial Vehicles										
110	General Light Industrial, Total	0.000	KSF	See above	See above	88%	12%	See above	13%	87%
Passenger Car and Small Commercial Vehicle Trips Subtotal										
110	General Light Industrial, Total	525.000	KSF	2,047	290	255	35	261	34	227
Gross Project Total		**525.000**		**3,459**	**488**	**329**	**158**	**439**	**153**	**286**
Trip Generation Totals Subtracted for Net Total -Former Use										
140	Manufacturing	101	Employees	249	38	28	10	33	13	20
Net Project Total		**525.000**		**3,210**	**450**	**301**	**149**	**406**	**140**	**266**

Passenger Car Equivalent factors applied were 2.0 for 2 axle trucks, 2.5 for 3-axle trucks and 3.00 for 4+ axle trucks.
1. Total Peak hour and Daily trip generation and passenger/small commercial category entry and exit percentages derived from 10th Edition ITE Trip Generation Manual.
2. Applies truck percentages of total traffic taken from City of Fontana Truck Trip Generation Study, Dated August 2003.

Project Trip Assignment

Project traffic was assigned to the roadway system. Figure 3.9-4 illustrates the assigned Project trips for the analyzed weekday a.m. and p.m. peak hours

Determination of Traffic Impacts

Traffic impacts are identified if a proposed development will result in a significant change in traffic conditions at a study intersection. A significant impact is typically identified if Project-related traffic will cause service levels to deteriorate beyond a threshold limit specified by the overseeing agency. The traffic study guidelines of the City of Irwindale define significant impacts based on pre-project LOS. If an intersection operates at an LOS value of D or lower under existing or future-without-project conditions, an impact occurs where the project causes operations to depreciate to LOS E or F.

When pre-project operations are at LOS E, deterioration of traffic to LOS F, or an increase of the V/C ratio greater than or equal to .02 at signalized intersections, causes a significant impact. When pre-project conditions are at LOS F at a signalized intersection, then the addition of 50 or more project trips causing an increase in the V/C ratio greater than or equal to .02 is considered significant. For un-signalized intersections operating at LOS F in pre-project conditions, the worsening of total control delay to more than four or five seconds per vehicle (for a single- or multi-lane approach), or the addition of 50 or more vehicle trips to an intersection where total control delay already exceeds these values, creates a significant impact.

These thresholds are summarized below.

Pre-project Level of Service	Impact Threshold	
	Signalized Intersections	Un-Signalized Intersections
A through D	LOS E or F	
E	(1). LOS F (2). V/C increase of at least .02	LOS F
F	Addition of more than 50 project trips and an increase in V/C of .02 or greater.	(1). Project trips cause total control delay of minor-street approach to increase to more than 4.0 seconds per vehicle for a single lane approach or 5.0 seconds per vehicle for a multi-lane approach. (2). Addition of more than 50 project trips when total control delay exceeds 4.0 seconds per vehicle (for single-lane approach) or 5.0 seconds per vehicle (for multi-lane approach).

V/C= Volume-to-Capacity Ratio

Source: Irwindale Traffic Study Guidelines, August 2014

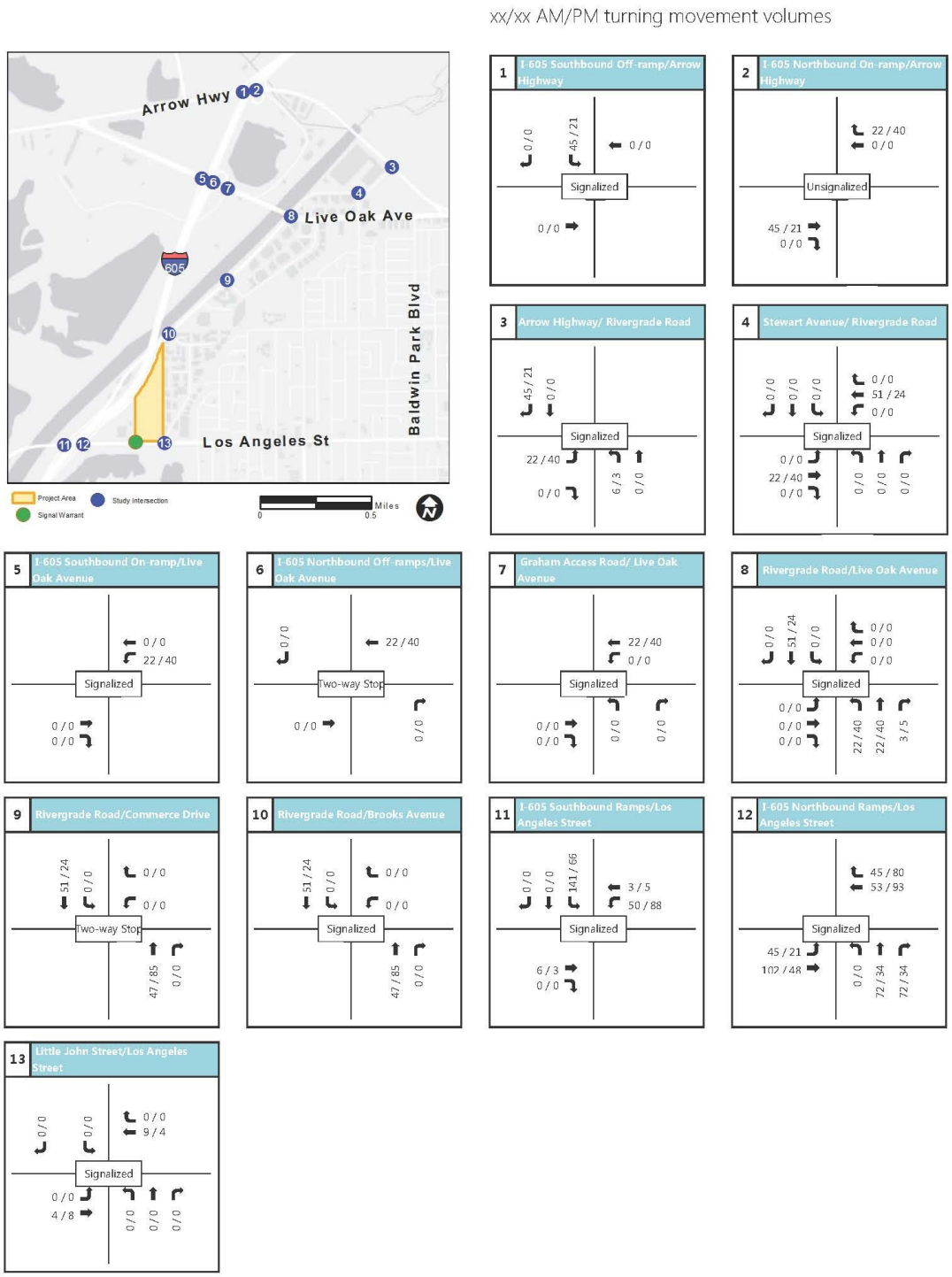

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Figure 3.9-4. Project Trip Assignment – AM/PM Peak Hour

2019-030 Irwindale Industrial Spec Tilt-Up Project

3.9.4.3 Project Impact Analysis

Impact 3.9.1 Conflict with Program, Plan, Ordinance or Policy Addressing the Circulation System

Threshold:	*Would the Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*

Roadway Circulation System

Project impacts on the circulation system are addressed in this section. The scope and methods used for Project traffic impact analysis conform to current traffic study guidelines and environmental review policies of the City of Irwindale. The impact analysis addresses the following traffic scenarios:

- Existing Conditions
- Existing with Project Conditions
- Future without Project Conditions
- Future with Project Conditions

Existing with Project Conditions

Existing traffic conditions at the study intersections with the addition of Project-generated traffic is derived by adding Project trips to the existing traffic volumes. Table 3.9-4 summarizes the resulting V/C, Vehicle Delay and LOS values at the study intersections for the existing with-Project conditions.

Table 3.9-4 – Study Intersection Existing With-Project Conditions

Study Intersections		Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.134	**F**	0.620	B
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.730	C	0.639	B
4	Stewart Avenue/ Rivergrade Road	0.350	A	0.369	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.862	D	1.273	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	1129.3	**F**	606.9	**F**
7	Graham Access Road/ Live Oak Avenue	0.662	B	0.670	B
8	Rivergrade Road/Live Oak Avenue	0.679	B	0.964	**E**
9	Rivergrade Road/Commerce Drive*	27.4	D	30.8	D
10	Rivergrade Road/Brooks Avenue	0.490	A	0.397	A
11	I-605 Southbound Ramps/Los Angeles Street	0.849	D	0.866	D
12	I-605 Northbound Ramps/Los Angeles Street	1.002	**F**	0.980	**E**
13	Little John Street/Los Angeles Street	0.581	A	0.750	C

LOS = Level of Service

V/C= Volume to Capacity Ratio

**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Eight of the 13 study intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours. The following study intersections would operate at LOS values of E or F during either peak period:

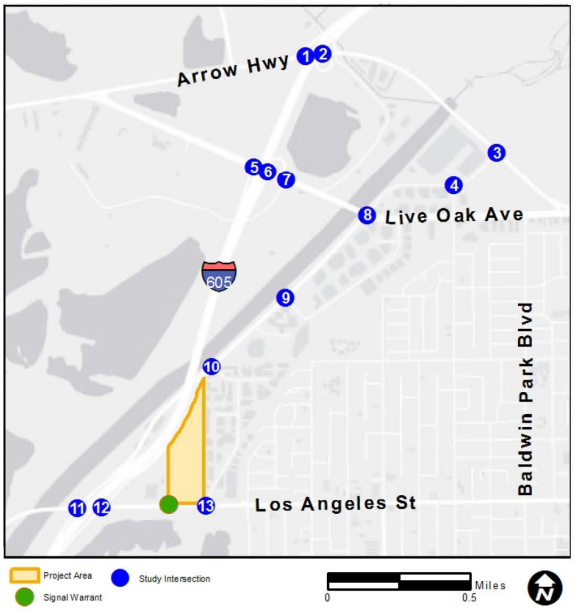
- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Northbound Ramps/Los Angeles Street

The existing with-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated in Figure 3.9-5.

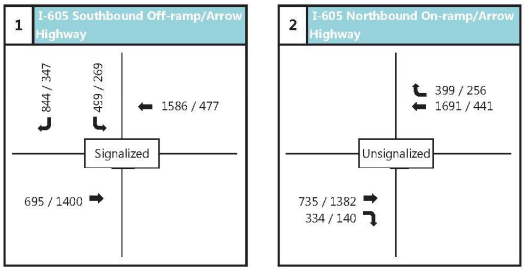
Future without Project Conditions

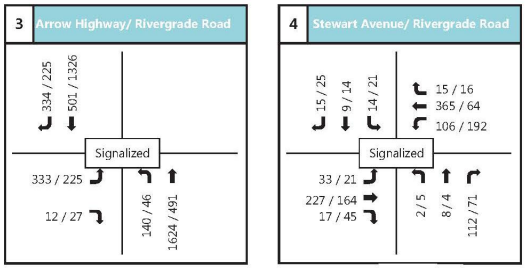
This scenario addresses future traffic conditions in the study area with area/related project trips and background growth added, but without Project traffic (i.e. Future Baseline with Cumulative Projects, but without the Project). The proposed Project is anticipated to be completed in the year 2021 which defines the future analysis year. In order to acknowledge regional population and employment growth outside of the study area, an ambient traffic growth rate was applied to the existing traffic counts. An annual growth rate of two percent was used for this analysis.

In addition to the application of the ambient traffic growth rate, traffic from related/area projects (approved and pending developments) was included as part of the project completion year analysis. A total of 22 projects were identified for inclusion in the traffic impact analysis. These include 13 related projects in the City of Irwindale, five related projects in the City of El Monte, and four related projects in the City of Baldwin Park. Their locations are illustrated on Figure 3.0-1. Table 3.9-5 provides the trip generation estimates for the related/area projects, including related project volumes for the weekday a.m. and p.m. peak hours.



xx/xx AM/PM turning movement volumes





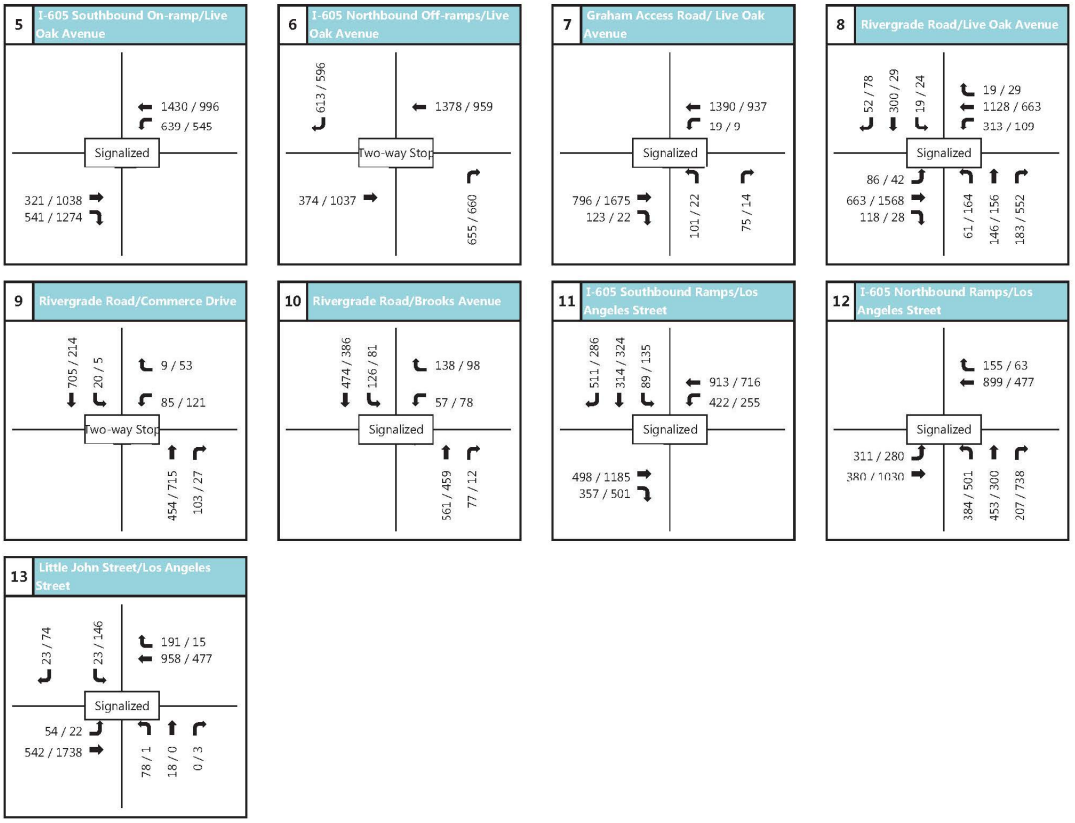


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Figure 3.9-5. Existing with Project – AM/PM Peak Hour Traffic Volumes

Table 3.9-5 – Area Projects Trip Generation Estimate

No_	Project Name	Address	City	Land Use	Intensity	Units	Daily	AM Peak Hour			PM Peak Hour		
								Rate	% In	% Out	Rate	% In	% Out
1	Manning Pit	5175 Vincent Avenue	Irwindale	General Light Industrial	545.735	KSF	2,707	382	336	46	344	45	299
2	The Park @ Live Oak	1200 Arrow Highway	Irwindale	General Light Industrial	1,451.400	KSF	7,199	1,016	894	122	914	119	795
			Irwindale	Shopping Center	98.600	KSF	3,722	93	58	35	376	180	196
3	Panattoni	16203-16233 Arrow Highway	Irwindale	General Light Industrial	130.366	KSF	647	91	80	11	82	11	71
4	Panattoni	242 Live Oak Avenue	Irwindale	General Light Industrial	85.400	KSF	424	60	53	7	54	7	47
5	Ayala Industrial Bldg.	5589 Ayala Avenue	Irwindale	General Light Industrial	80.000	KSF	397	56	49	7	50	7	43
6	Irwindale Med. Clinic	15768 Arrow Highway	Irwindale	Medical/Dental Office	13.300	KSF	463	37	29	8	46	13	33
7	Wendy's Restaurant	15768 Arrow Highway	Irwindale	Fast-Food with Drive-Thru Window	2.300	KSF	1,083	92	47	45	75	39	36
8	Kaiser Med. Office Bldg.	12761 Schabarum Avenue	Irwindale	Medical/Dental Office	90.000	KSF	3,132	250	195	55	311	87	224
9	Reliance II	15990 Foothill Boulevard	Irwindale	General Light Industrial	1,853.000	KSF	9,191	1,297	1,141	156	1,167	152	1,015
			Irwindale	Shopping Center	10.000	KSF	378	9	6	3	38	18	20
10	City of Hope	1500 E. Duarte Road	Irwindale	Medical/Dental Office	108.804	KSF	3,786	302	236	66	376	105	271
11	Tentative Tract Map 82190	2424 & 2428 Mountain Avenue	Irwindale	Single-Family Homes	7.0	Dwelling Units	66	5	1	4	7	4	3
12	Tentative Parcel Map 82188	4826 Baca Avenue	Irwindale	Single-Family Homes	4.0	Dwelling Units	38	3	1	2	4	3	1
13	Tentative Parcel Map 82189	5134 Irwindale Avenue	Irwindale	Single-Family Homes	2.0	Dwelling Units	19	1	0	1	2	1	1
14	22-unit single-family subdivision	4422-4436 Bannister Street	El Monte	Single-Family Homes	22.0	Dwelling Units	208	16	4	12	22	14	8
15	3 new single-family units	5229 Hammill Road	El Monte	Single-Family Homes	3.0	Dwelling Units	28	2	1	1	3	2	1
16	3 2,747 Square foot res units on	11646 Lower Azusa Road	El Monte	Single-Family Homes	3.0	Dwelling Units	28	2	1	1	3	2	1
17	5-unit PUD and one common private	11830 Lambert Avenue	El Monte	Single-Family Homes	5.0	Dwelling Units	47	4	1	3	5	3	2
18	5-detached 2-story res units	11613 Rio Hondo Parkway	El Monte	Single-Family Homes	5.0	Dwelling Units	47	4	1	3	5	3	2
19	23 unit condominiumn	14751 Badillo Street	Baldwin Park	Multifamily Housing (Mid-Rise)	23.0	Dwelling Units	125	8	2	6	10	6	4
20	97,945 sq ft, 10 unit industrial warehouse condominium	5119 Azusa Canyon Rd	Baldwin Park	General Light Industrial	97.945	KSF	486	69	61	8	62	8	54
21	15 single family residential	15138 Nubia Street	Baldwin Park	Single-Family Homes	15.0	Dwelling Units	142	11	3	8	15	9	6
22	5 unit condominium	4232 LA Rica Avenue	Baldwin Park	Multifamily Housing (Low Rise)	5.0	Dwelling Units	37	2	0	2	3	2	1
Total							34,400	3,812	3,200	612	3,974	840	3,134

Future without Project Intersection Level of Service

The future without-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 3.9-6. Table 3.9-6 summarizes the V/C, Vehicle Delay and LOS values at the study intersections under this scenario.

Table 3.9-6 – Study Intersection Future without-Project Conditions

	Study Intersections	Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.365	**F**	0.764	C
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.748	C	0.646	B
4	Stewart Avenue/ Rivergrade Road	0.346	A	0.367	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.935	**E**	1.614	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	3409.4	**F**	1033.8	**F**
7	Graham Access Road/ Live Oak Avenue	0.685	B	0.700	B
8	Rivergrade Road/Live Oak Avenue	0.700	B	1.003	**F**
9	Rivergrade Road/Commerce Drive*	26.0	D	27.5	D
10	Rivergrade Road/Brooks Avenue	0.490	A	0.380	A
11	I-605 Southbound Ramps/Los Angeles Street	0.827	D	0.850	D
12	I-605 Northbound Ramps/Los Angeles Street	0.965	**E**	0.969	**E**
13	Little John Street/Los Angeles Street	0.586	A	0.752	C

LOS = Level of Service

V/C= Volume to Capacity Ratio

**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Eight of the 13 study intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours. The following study intersections would continue to operate at poor LOS values of E or F during either peak period:

- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Northbound Ramps/Los Angeles Street

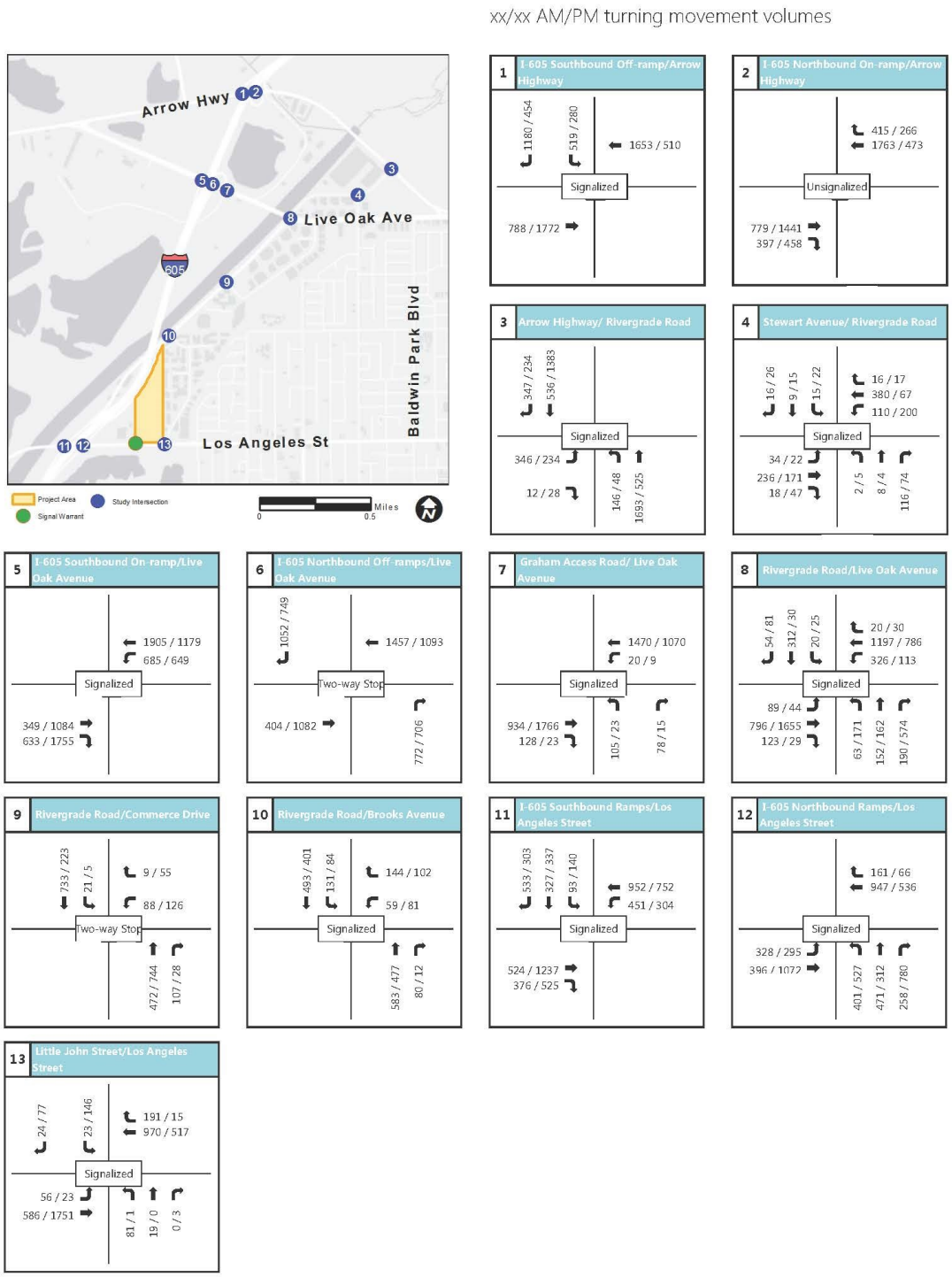

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Figure 3.9-6. Future without Project – AM/PM Peak Hour Traffic Volumes

2019-030 Irwindale Industrial Spec Tilt-Up Project

Future with Project Conditions

Future traffic conditions at the study intersections with the addition of Project-generated traffic were derived by adding Project trips to the future without-Project scenario volumes. Table 3.9-7 summarizes the resulting V/C (or delay) and LOS values at the study intersections for the future with-Project traffic conditions.

Table 3.9-7 – Study Intersection Future with-Project Conditions

Study Intersections		Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.365	**F**	0.764	C
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.755	C	0.661	B
4	Stewart Avenue/ Rivergrade Road	0.359	A	0.379	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.949	**E**	1.639	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	3496.9	**F**	1119.2	**F**
7	Graham Access Road/ Live Oak Avenue	0.692	B	0.700	B
8	Rivergrade Road/Live Oak Avenue	0.730	C	1.006	**F**
9	Rivergrade Road/Commerce Drive*	29.9	D	34.6	D
10	Rivergrade Road/Brooks Avenue	0.505	A	0.407	A
11	I-605 Southbound Ramps/Los Angeles Street	0.887	D	0.920	**E**
12	I-605 Northbound Ramps/Los Angeles Street	1.055	**F**	1.032	**F**
13	Little John Street/Los Angeles Street	0.589	A	0.755	C

LOS = Level of Service

V/C= Volume to Capacity Ratio

**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Seven of the 13 study intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours. The following six study intersections would operate at LOS E or F during either peak period:

- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Southbound Ramps/Los Angeles Street
- I-605 Northbound Ramps/Los Angeles Street

The future with-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 3.9-7.

Comparison of Tables 3.9-6 and 3.9-7 indicates that based on the applied City of Irwindale significant traffic impact criteria, the proposed Project would create significant traffic impacts at two study intersections under future with-Project conditions.

- 11. I-605 Southbound Ramps/Los Angeles Street
- 12. I-605 Northbound Ramps/Los Angeles Street

Mitigation measures for significant project impacts at these intersections are provided in Section 3.9.5.

Los Angeles Street and Main Project Site Driveway. For post-project conditions, the peak-hour volumes along Los Angeles Street are 1,894 vehicles during the weekday AM peak hour and 2,450 vehicles during the PM peak hour. The Project driveway volume would be 102 vehicles in the AM peak hour and 181 vehicles in the PM peak hour. Based on the analyzed data, peak-hour volumes at this driveway for the future with Project condition would warrant a traffic signal at this location. Mitigation for this impact is provided in Section 3.9-5.

Congestion Management Program and Freeway Impacts

The proposed Project is not anticipated to cause a significant traffic impact at any Metro Congestion Management Program (CMP) arterial monitoring intersections, but would exceed CMP freeway segment thresholds.

Congestion Management Program (CMP) Impacts

The nearest CMP arterial to the project site is Azusa Avenue, which is over four miles east of the Project site. The CMP intersections of Azusa Avenue and Arrow Highway and Azusa Avenue and Workman Avenue are located at a distance of 4.5 miles to the northeast and southeast of the Project site:

- CM ID 14 – Azusa Avenue and Arrow Highway
- CMP ID 159 – Azusa Avenue and Workman Avenue

The Project trip assignment analysis indicated that no more than 11 project trips are expected to travel to/from the Project site along arterial roadways to the east. Therefore, neither of the arterial monitoring stations requires additional CMP impact analysis. The Project would not have a significant CMP impact.

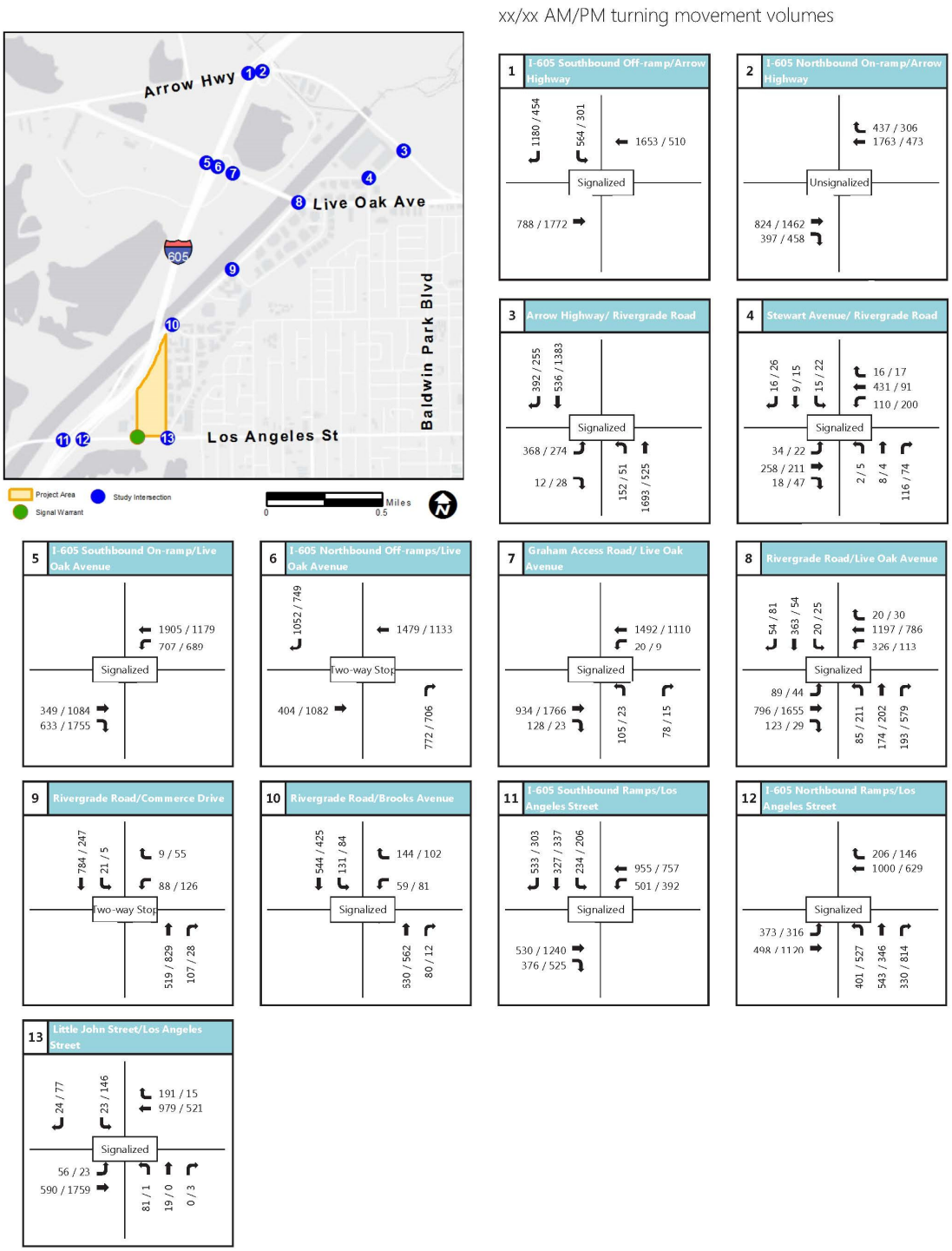

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Figure 3.9-7. Future with Project – AM/PM Peak Hour Traffic Volumes

Freeway Impacts

A Caltrans facility impact analysis was conducted that included freeway mainline segments, diverging/converging points between ramps and the mainline, and queuing at freeway off-ramps. The I-10 (San Bernardino Freeway), I-210 (Foothill Freeway) and I-605 (San Gabriel Valley Freeway) are CMP freeway routes maintained by Caltrans within or near the Project study area. The analyzed access ramp locations are illustrated on Figure 3.9-8. Mainline LOS calculations are summarized in Table 3.9-8.

Table 3.9-8 – Mainline LOS Calculations

No	Fwy/Direction	Mainline Segment	Peak Hour	Existing (2017) Condition		Future (2020) No Project		Future (2020) With Project	
				Density	LOS	Density	LOS	Density	LOS
1	I-210	Back of I-605	Weekday AM	35.2	E	40.1	E	41.0	E
			Weekday PM	36.1	E	41.2	E	41.9	E
2	I-605 SB	Ahead of Arrow Highway	Weekday AM	24.2	C	27.4	D	28.4	D
			Weekday PM	23.2	C	25.2	C	25.6	C
3	I-605 SB	Ahead of Live Oak Avenue	Weekday AM	23.5	C	23.5	C	24.1	C
			Weekday PM	21.2	C	22.5	C	22.8	C
4	I-605 SB	Ahead of Lower Azusa Road/Los Angeles Street	Weekday AM	27.7	D	30.4	D	31.5	D
			Weekday PM	26.4	D	31.4	D	32.1	D
5	I-605 SB	Back of Lower Azusa Road/Los Angeles Street (Ahead of Ramona Blvd)	Weekday AM	30.8	D	34.5	D	35.0	D
			Weekday PM	29.1	D	35.7	E	36.7	E
6	I-10	Back of I-605	Weekday AM	35.2	E	40.1	E	40.4	E
			Weekday PM	33.4	D	37.6	E	37.9	E
7	I-10	Ahead of I-605	Weekday AM	-	F	-	F	-	F
			Weekday PM	-	F	-	F	-	F
8	I-605 NB	Back of Lower Azusa Road/Los Angeles Street (Ahead of Ramona Blvd)	Weekday AM	31.2	D	38.5	E	39.9	E
			Weekday PM	29.5	D	33.2	D	33.7	D
9	I-605 NB	Ahead of Lower Azusa Road/Los Angeles Street	Weekday AM	27.5	D	33.0	D	33.6	D
			Weekday PM	26.2	D	29.0	D	29.6	D
10	I-605 NB	Ahead of Live Oak Avenue	Weekday AM	22.3	C	23.8	C	24.2	C
			Weekday PM	21.5	C	22.8	C	23.2	C
11	I-605 NB	Ahead of Arrow Highway	Weekday AM	25.7	C	28.0	D	28.7	D
			Weekday PM	24.6	C	28.1	D	28.9	D
12	I-210	Ahead of I-605	Weekday AM	37.9	E	44.3	E	45.0	E
			Weekday PM	39.0	E	-	F	-	F

LOS = Level of Service

At six freeway mainline segments and three diverging/merging areas, the Project would contribute to potentially significant cumulative impacts per Caltrans standards. The following mainline segments would be operating at LOS E or F in the Project year with addition of proposed Project traffic:

- I-210, back of I-605
- I-605 southbound, back of Lower Azusa Road
- I-10, back of I-605
- I-10, ahead of I-605
- I-605 northbound, back of Lower Azusa Road
- I-210, ahead of I-605

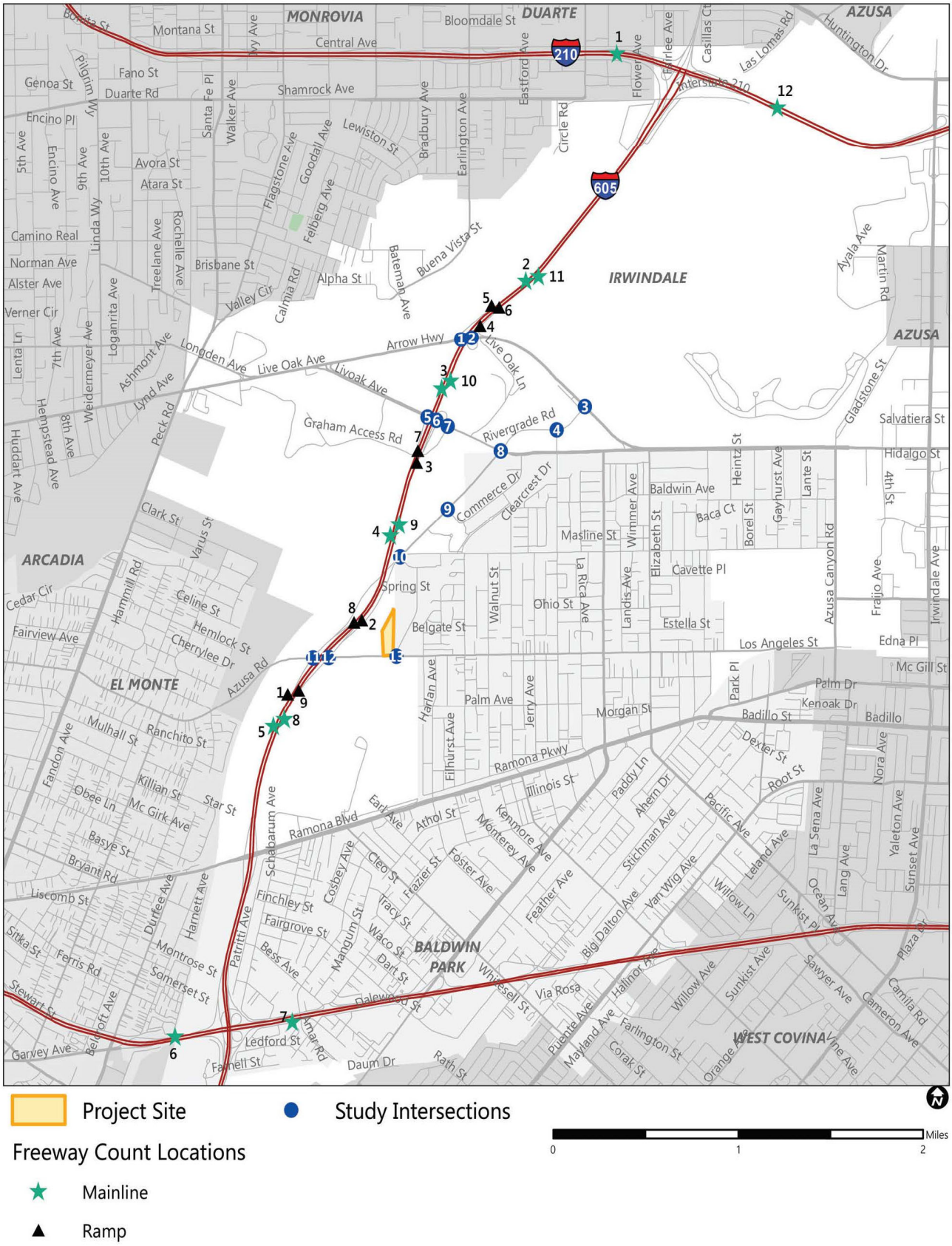

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Figure 3.9-8. Study Mainline and Ramp Location

2019-030 Irwindale Industrial Spec Tilt-Up Project

Based on an analysis of ramp queues and existing lengths, operations will be significantly impacted under Future-with-Project conditions at three off-ramps. The Project creates a new queuing impact (compared with Future-without-Project conditions) at the I-605 southbound off-ramp at Lower Azusa Road. The following merging/diverging areas at ramp junctions with mainline segments would be operating at LOS E or F in the Project year, and would experience cumulatively significant impacts with addition of proposed Project traffic:

- I-605 Northbound Off-Ramp at Los Angeles Street
- I-605 Northbound Off-Ramp at Live Oak Avenue
- I-605 Southbound Off-Ramp at Lower Azusa Road

The Project would contribute to **potentially significant cumulative traffic impacts** at six freeway mainline segments and three diverging/merging areas, per Caltrans traffic impact study guidelines and deficient LOS values.

Transit System

The vicinity of the proposed Project site is adequately served by bus transit lines operated by Foothill Transit, with three bus transit lines providing access in the Project vicinity. Access to Montclair Metrolink is available via a bus connection from the El Monte Bus Station. **No conflict with the transit circulation system would occur.**

Bicycle and Pedestrian Facilities

The City of Irwindale continues to support the development and expansion of the region's public and mass transit system (Irwindale 2008). In accordance with those efforts, the Project would provide 13 long-term bicycle parking spaces onsite. The proposed Project would not otherwise conflict with adopted policies, plans or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) in the City of Irwindale. **No impact would occur.**

Overall, the Project would contribute **significant impacts.**

Impact 3.9.2 Conflict or Inconsistency with CEQA Guidelines section 15064.3 subdivision (b)

Threshold:	*Would the Project conflict or be inconsistent with CEQA Guidelines section 15064.3 subdivision (b)?*

The City of Irwindale has not adopted a methodology to assess project impacts based on vehicle miles traveled (VMT) consistent with SB 743. Local jurisdictions have an opt-in period lasting until July 1, 2020 to update their respective guidance to comply with SB 743 and to incorporate required VMT thresholds into their CEQA-related transportation impact review for projects. As such, the Project traffic impact analysis is based on the City's current and existing Irwindale Traffic Study Guidelines (2014), which use LOS and delay as a measure for significant transportation impacts under CEQA. The traffic impact analysis consistent with current guidelines is included under preceding Threshold 1. As such, there would be no conflict or inconsistency with CEQA Guidelines section 15064.3 subdivision (b). **No impact would occur.**

Impact 3.9.3 Hazards Due to a Geometric Design Feature or Incompatible Uses

Threshold:	*Would the Project substantially increase hazards due to a geometric design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?*

The Project would not create or increase any hazards associated with geometric design features. Access to the Project site will be provided with two City standard driveways on Los Angeles Street and two new City standard driveways on Rivergrade Road. Driveway designs would provide for safe turning movements and comply with sight distance standards. The Project is proposed in an urban, industrial area and is compatible with surrounding uses. Therefore, **no impact would occur.**

Impact 3.9.4 Emergency Access

Threshold 4:	*Would the Project result in inadequate emergency access?*

Adequate emergency access to the Project site would be available from multiple driveways on Los Angeles Street and Rivergrade Road. **No impact would occur.**

3.9.5 Mitigation Measures

The Project will participate in the City's Development Impact Fee (DIF) program for Citywide infrastructure improvements covered under the DIF program.

Project Fair Share

City of Irwindale traffic study guidelines require a fair-share volume analysis at significantly impacted study locations. The identified Project significant impacts occur at the two intersections of Los Angeles Street with the I-605 freeway ramps. The fair-share percentages for these locations were based on the following formula within the guidelines: project volumes/existing with-project volumes

The volumes used for this calculation are peak-hour, and both the AM and PM peak conditions were analyzed. The fair-share percentages for the two intersections for both peak hours are as follows:

<u>I-605 Southbound Ramps/Los Angeles Street</u>

- <u>AM peak hour</u>: 200 project trips / 3,304 existing with-project trips = 6.1 percent
- <u>PM peak hour</u>: 162 project trips / 3,564 existing with-project trips = 4.6 percent

<u>I-605 Northbound Ramps/Los Angeles Street</u>

- <u>AM peak hour</u>: 389 project trips / 3,178 existing with-project trips = 12.2 percent
- <u>PM peak hour</u>: 310 project trips / 3,699 existing with-project trips = 8.4 percent

Mainline Freeway Segments

The Project share of volumes on impacted mainline freeway segments would range from 1 percent to 6.8 percent. These percentages are presented in Table 3.9-9 as informational items, as Caltrans does not have defined impact standards.

Table 3.9-9 – Fair-Share Calculations on Impacted Mainline Freeway Segments

Segment No	Segment Name	Period	1. Project Trips	2. Project Buildout Traffic *	3. Existing Traffic	4. Area Project Traffic	5. Post-Project Traffic minus Existing and Area Project Traffic	6. Fair-Share Percent= 1./5.
1	I-210, Back of I-605	AM	112	11830	9016	122	2692	4.2%
		PM	85	11972	9145	126	2701	3.1%
5	I-605 SB, Back of Lower Azusa Road/Los Angeles Street	PM	128	8680	6616	43	2021	6.3%
6	I-10, Back of I-605	AM	43	12259	9404	121	2734	1.6%
		PM	38	11838	9080	122	2636	1.4%
7	I-10, Ahead of I-605	AM	29	11576	8884	121	2571	1.1%
		PM	26	11180	8578	122	2480	1.0%
8	I-605 NB, Back of Lower Azusa Road/Los Angeles Street	AM	144	9554	6889	550	2115	6.8%
12	I-210, Ahead of I-605	AM	74	12441	9474	182	2785	2.7%
		PM	56	12604	9609	190	2805	2.0%

**Obtained by factoring up existing traffic volumes to year 2040 levels by a growth rate defined in the Los Angeles County Congestion Management Plan, then adding project and area project trips.*

3.9.5.1 Project-Level Mitigation

MM TRANS-1: A Construction Traffic Management Plan and Truck Haul Route Program shall be prepared for City Traffic Engineer approval to address how the Project will minimize congestion on streets and freeways during the construction period. The Plan/Program will be made available for review by Caltrans.

Level of Significance After Mitigation

Less than significant construction traffic impact.

MM TRANS-2: The Project shall provide a T-Intersection traffic signal at the main Project driveway on Los Angeles Street. The City Engineer shall make the final determination as to need and timing of the traffic signal based on traffic signal warrants.

Level of Significance After Mitigation

Implementation of the traffic signal when warranted would reduce the intersection impact to a less than significant level.

MM TRANS-3: Project access and internal circulation shall be designed to assure that all tenants of the Project have access to at least one Project driveway at Los Angeles Street and Rivergrade Road for ingress and egress.

Level of Significance After Mitigation

Less than significant impact.

MM TRANS-4: Prior to the issuance of building permits, the project applicant shall pay the Project's fair share amount for improvements at two study intersections under future with-Project conditions:

- I-605 Southbound Ramps/Los Angeles Street
- I-605 Northbound Ramps/Los Angeles Street

Improvements will include the addition of lanes to the freeway off-ramps at both locations and will require widening of the off-ramp facilities. At the southbound off-ramp location, the recommended mitigation measure is an added left-turn lane at the ramp approach. At the northbound off-ramp location, the recommended mitigation measure is an added right-turn lane at the ramp approach.

Level of Significance After Mitigation

Implementation of the mitigation measure would fully mitigate the identified impacts at both study intersections, under both existing plus-Project and future with-Project conditions. Caltrans would be responsible for implementation and timing of improvements. In the event the specified improvements are not constructed when needed, a significant impact would occur.

3.9.5.2 Cumulative-Level Mitigation

Mainline Freeway Segments

The Project share of volumes on impacted mainline freeway segments would range from 1 percent to 6.8 percent. These percentages are presented in Table 3.9-9 as informational items, as Caltrans does not have defined impact standards.

The Project would contribute to significant cumulative impacts at six freeway mainline segments and three diverging/merging areas, per Caltrans traffic impact study guidelines and deficient LOS values. It is not within the jurisdictional authority of purview of the Lead Agency or Applicant to adopt, implement, or enforce mitigation measures requiring the construction of improvements by Caltrans, or upon facilities within Caltrans jurisdiction. As such, there are no feasible mitigation measures that will reduce cumulative mainline freeway impacts below significance thresholds. Traditional funding mechanisms used to improve mainline freeway impacts include Los Angeles County's Measure M revenue for transportation, state and federal gas tax, and formula distributions from vehicle registration fees. Future employees/patrons of the Project contribute indirectly to freeway improvements through these sources. However, the Project's contribution to cumulative-level impacts associated with mainline freeway impacts at six is considered significant and unavoidable.

Level of Significance After Mitigation

Cumulative impacts are significant and unavoidable.

3.10 Tribal Cultural Resources

This section considers and evaluates the potential impacts of the proposed Project on cultural resources of the California Native American tribes. Tribal cultural resources include landscapes, sacred places, or objects with cultural value to a tribe. This section describes the affected environment and regulatory setting for Tribal Cultural Resources in the Project area. The following analysis of the potential environmental impacts related to Tribal Cultural Resources are derived primarily from the following sources:

- California Historical Resources Information System Records search on March 20, 2019;
- Historic Resources Inventory Report prepared by Dudek (May 2019); and
- AB 52 tribal coordination between the City of Irwindale and the Gabrielino Band of Mission Indians–Kizh Nation on March 14, 2019.

3.10.1 Environmental Setting

Ethnography

Based on evidence presented through past archaeological investigations, the Gabrielino appear to have arrived in the Los Angeles Basin around 500 B.C (Dudek 2019 – Appendix D). Surrounding native groups included the Chumash and Tataviam to the northwest, the Serrano and Cahuilla to the northeast, and the Juaneño and Luiseño to the southeast. The names by which Native Americans identified themselves have, for the most part, been lost and replaced by those derived by the Spanish people administering the local Missions.

These names were not necessarily representative of a specific ethnic or tribal group, and traditional tribal names are unknown in the post- Contact period. The name "Gabrielino" was first established by the Spanish from the San Gabriel Mission and included people from the established Gabrielino area as well as other social groups (Dudek 2019 – Appendix D). Many modern Native Americans commonly referred to as Gabrielino identify themselves as descendants of the indigenous people living across the plains of the Los Angeles Basin and refer to themselves as the Tongva (King 1994). This term is used here in reference to the pre-Contact inhabitants of the Los Angeles Basin and their descendants.

The Tongva established large, permanent villages along rivers and streams, and lived in sheltered areas along the coast. Tongva lands included the greater Los Angeles Basin and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina and stretched from the foothills of the San Gabriel Mountains to the Pacific Ocean. Tribal population has been estimated to be at least 5,000 but recent ethnohistoric work suggests a much larger population, approaching 10,000 (Dudek 2019 – Appendix D). Archaeological sites composed of villages with various sized structures have been identified through the Los Angeles Basin.

Known Cultural Resources in the Area

The South-Central Coastal Information Center (SCCIC) records indicate that seven cultural resources have been recorded within 1 mile of the Project site; none of which overlap or are located adjacent to the

Project site. The resources include a historic refuse deposit, one is a historic road, and five are historic structure.

According to the Cultural Resources Inventory, the Project site appears not eligible under all National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and City of Irwindale designation criteria. The Project site only retains integrity of location, design, workmanship, and feeling and does not maintain the requisite integrity to support listing in the NRHP, CRHR, or as a City of Los Angeles HCM. Additionally, no archaeological resources were identified within the Project site as a result of the CHRIS records search.

Summary of Tribal Consultation

AB 52 consultation requirements went into effect on July 1, 2015 for all projects that have not already published a Notice of Intent to Adopt a Negative Declaration or Mitigated Negative Declaration (MND) or published a Notice of Preparation of an EIR (Section 11 [c]). On March 13, 2019, the City of Irwindale sent proposed Project notification letters to the following California Native American tribes, which had previously submitted AB 52 general consultation request letters pursuant to AB 52 (21080.3.1(d) of the Public Resources Code): Gabrielino-Tongva Tribe, Gabrielino/Tongva Nation, Gabrielino Tongva Nation, Gabrielino/Tongva San Gabriel Band of Mission Indians, Gabrielino Tongva Indians of California Tribal Council, and Gabrielino Band of Mission Indians-Kizh Nation. Each recipient was provided a brief description of the proposed Project and its location, the lead agency contact information, and a notification that the tribe has 30 days to request consultation.

As a result of the notification letters, the City received a single request for consultation from the Gabrielino Band of Mission Indians–Kizh Nation. A tribal consultation conference with the Kizh Nation was held on March 14, 2019. Although no known tribal cultural resources at the Project site were identified, tribal representatives indicated the proposed Project site lies within their ancestral tribal territory. The project site's proximity to the San Gabriel River and associated traditional Native American trade routes makes it sensitive for tribal cultural resources and the potential for discovery of buried cultural resources in native soils at the site.

3.10.2 Regulatory Setting

Federal

National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires that the federal government list significant historic resources on the NRHP, which is the nation's master inventory of known historic resources. The NRHP is administered by the National Park Service and includes listings of buildings, structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the national, state, or local level.

Structures, sites, buildings, districts, and objects over 50 years of age can be listed in the NRHP as significant historic resources. However, properties under 50 years of age that are of exceptional

importance or are contributors to a historic district can also be included in the NRHP.[5] The criteria for listing in the NRHP include resources that:

a) Are associated with events that have made a significant contribution to the broad patterns of history;

b) Are associated with the lives of persons significant in our past;

c) Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

d) Have yielded or may likely yield information important in prehistory or history.

State

Assembly Bill 52

Effective July 1, 2015, Assembly Bill 52 (AB 52) amended CEQA to mandate consultation with California Native American tribes during the CEQA process to determine whether or not the proposed Project may have a significant impact on a Tribal Cultural Resource, and that this consideration be made separately from cultural and paleontological resources.

Section 21073 of the Public Resources Code defines California Native American tribes as "a Native American tribe located in California that is on the contact list maintained by the Native American Heritage Commission (NAHC)for the purposes of Chapter 905 of the Statutes of 2004." This includes both federally and non-federally recognized tribes.

Section 21074(a) of the Public Resource Code defines Tribal Cultural Resources for the purpose of CEQA as:

1. Sites, features, places, cultural landscapes (geographically defined in terms of the size and scope), sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

    a. included or determined to be eligible for inclusion in the California Register of Historical Resources; and/or
    b. included in a local register of historical resources as defined in subdivision (k) of Section 5020.1; and/or

2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this

[5] A [historic] district possesses a significant concentration, linkage, or continuity of sites, buildings, structures, or objects united historically or aesthetically by plan or physical development (National Park Service 2015).

paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Because criteria a and b also meet the definition of an Historical Resource under CEQA (see Section 3.2 Cultural Resources), a TCR may also require additional consideration as an Historical Resource. Tribal Cultural Resources may or may not exhibit archaeological, cultural, or physical indicators.

Recognizing that California tribes are experts in their tribal cultural resources and heritage, AB 52 requires that CEQA lead agencies carry out consultation with tribes at the commencement of the CEQA process to identify TCRs. Furthermore, because a significant effect on a TCR is considered a significant impact on the environment under CEQA, consultation is required to develop appropriate avoidance, impact minimization, and mitigation measures.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains can occur until the County Coroner has examined the remains (Health and Safety Code Section 7050.5b). PRC Section 5097.98 outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5c). The NAHC would notify the most likely descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

County of Los Angeles General Plan

The County's General Plan Conservation and Natural Resources Element has several policies and action items related to cultural resources. While many of these policies and action items required the County to take certain actions, they are not related to development of a particular project. Those policies that pertain to the proposed Project are listed below:

Historic, Cultural, and Paleontological Resource Protection

Policy C/NR 14.1: Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.

Policy C/NR 14.2: Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.

Policy C/NR 14.4: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).

Policy C/NR 14.5: Promote public awareness of historic, cultural, and paleontological resources.

Policy C/NR 14.6: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

City of Irwindale General Plan

The City of Irwindale General Plan Resources Management Element provides a framework for preservation of cultural resources in the City. The following are those policies that would pertain to the proposed Project:

Cultural Awareness. A cornerstone of this program will be the identification of a site/location that may be used for the storage and collection of artifacts, photographs, books, and displays. The City will cooperate with local organizations (such as the local historical society, Chamber of Commerce, etc.) and individuals to acquire resource materials concerning local history and culture. These materials include books, photographs, artifacts, furniture, etc., that may be displayed in a future City museum. The City will continue to support cultural resource conservation and preservation efforts in Irwindale.

Cultural Resource Management. Should archaeological or paleontological resources be encountered during excavation and grading activities, all work would cease until appropriate salvage measures are established. Appendix K of the California Environmental Quality Act (CEQA) Guidelines shall be followed for excavation monitoring and salvage work that may be necessary. Salvage and preservation efforts will be undertaken pursuant to Appendix K requirements outlined in CEQA.

Environmental Review. The City shall continue to evaluate the environmental impacts of new development and identify applicable mitigation measures prior to development approval, as required by the California Environmental Quality Act (CEQA). Environmental review shall be provided for those projects that will have a potential to adversely affect the environment. Issue areas that will be addressed in the environmental analysis related to resource issues include: air quality, water and hydrology, plant life, animal life, natural resources, energy, aesthetics, recreation, and cultural resources. In compliance with CEQA, the City shall also assign responsibilities for the verification of the implementation of any mitigation measures.

3.10.3 Impact Analysis

3.10.3.1 Thresholds of Significance

Following Appendix G of the CEQA Guidelines, tribal cultural resource impacts are considered to be significant if the project would result in any of the following:

1) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

    a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or
    b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.

3.10.4 Impacts to Tribal Cultural Resources

Threshold:	*Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:* • *Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or* • *A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe?*

According to the project-specific Historic Resources Inventory Report (Dudek 2019 – Appendix D), the proposed Project site is neither listed or eligible for listing in the California Register of Historical Resources, nor in a local register of historical resources pursuant to PRC 5020.1(k). **No impact would occur.**

The proposed Project would not result in significant impacts to known TCRs. However, the concluded AB 52 consultation with the Gabriel Band of Mission Indians—Kizh Nation has indicated the project site is located within the ancestral territory of the Gabrieleno. The project site's proximity to the San Gabriel River and associated traditional Native American trade routes makes it sensitive for tribal cultural resources and the potential for discovery of buried cultural resources in native soils at the site. Thus,

significant impacts may occur from the discovery of unknown TCRs during ground disturbing activities from Project construction. Impacts to unknown TCRs would be less than significant with the implementation of mitigation measures **CUL-1** and **CUL-2** that include an opportunity for tribal participation in monitoring of subsurface excavations. These mitigation measures are described in Section 3.2 Cultural Resources.

For the reasons described above, impacts would be **less than significant with mitigation.**

3.10.5 Cumulative Impacts

Threshold:	*Would implementation of the proposed project, along with any foreseeable development in the project vicinity, could result in cumulative impacts to tribal cultural resources?*

As mitigated, the direct impacts associated with the proposed Project would be reduced to a less than significant level. While it is possible that grading and development could result in the discovery of cultural resources, mitigation measures and state and federal laws already in place would set in motion actions designed to mitigate these potential impacts. The Project is adjacent to existing development that has disturbed the soil and likely already affected any cultural resources. As a result of surrounding development, mitigation proposed in this section, and existing federal and state laws, this impact is considered less than cumulatively considerable.

3.10.6 Mitigation Measures

CUL-1: **Archaeological Monitoring and Accidental Discovery.** Prior to issuance of grading permits, and in adherence to the recommendations of the cultural resources records search, the Applicant shall retain a qualified archaeological monitor and, if interested pending conclusion of the tribal resources consultation, a Native American monitor. Monitoring by a qualified archaeologist should be conducted under the supervision of a Los Angeles County Certified archaeologist and, if interested, by a Native American monitor from one of the Gabrieleno groups recognized by the Native American Heritage Commission (NAHC). The monitor shall be present on the Project site during ground-disturbing activities to monitor rough and finish grading, excavation, and other ground-disturbing activities in any native soils (i.e. non-previously engineered soils). Because no cultural resources were identified on the Project site, archaeological monitors are not required to be present on a full-time basis but shall spot check ground-disturbing activities to ensure that no cultural resources are impacted during construction activities. The precise timing of monitoring activities shall be consistent with the provisions established in the Monitoring Plan.

The Monitoring Plan shall be prepared by a qualified archaeologist and shall be reviewed by the Community Development Manager/City Planner, or designee. The Monitoring Plan should include at a minimum: (1) a list of personnel involved in the monitoring activities; (2) a description of how the monitoring shall occur; (3) a description of the frequency of monitoring (e.g., full-time, part-time, spot checking); (4) a description of what resources may be encountered; (5) a description of circumstances that would result in the halting of work at the project site (e.g., what is considered a "significant"

archaeological site); (6) a description of procedures for halting work on site and notification procedures; and (7) a description of monitoring reporting procedures. If any significant historical resources, archaeological resources, tribal cultural resources, or human remains are found during monitoring, work shall be stopped within the immediate vicinity (precise area to be determined by the archaeologist in the field) of the resource until such time as the resource can be evaluated by an archaeologist. If the deposits are culturally significant, adverse effects on the deposits must be avoided, or such effects must be mitigated. Mitigation can include, but is not necessarily limited to: leaving the deposits in place, excavation of the deposit in accordance with a data recovery plan (see CCR Title 4(3) Section 5126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; production of a report detailing the methods, findings, and significance of the archaeological site and associated materials; curation of archaeological materials at an appropriate facility for future research and/or display; and an interpretive display of recovered archaeological materials at a local school, museum, or library.

Upon completion of all monitoring/mitigation activities, the consulting archaeologist shall submit a monitoring report to the Community Development Manager/City Planner, or designee, and to the SCCIC summarizing all monitoring/mitigation activities and confirming that all recommended mitigation measures have been met.

CUL-2: **Human Remains.** If human remains of any kind are found during construction, the requirements of CEQA Guidelines Section 15064.5(e) and Assembly Bill 2641 shall be followed. According to these requirements, all construction activities must cease immediately, and the Los Angeles County Coroner and a qualified archaeologist must be notified. The Coroner will examine the remains and determine the next appropriate action based on his or her findings. If the coroner determines the remains to be of Native American origin, he or she will notify the NAHC. The NAHC will then identify the MLD to be consulted regarding treatment and/or reburial of the remains. If an MLD cannot be identified, or the MLD fails to make a recommendation regarding the treatment of the remains within 48 hours after gaining access to them, the Native American human remains and associated grave goods shall be buried with appropriate dignity on the property in a location not subject to further subsurface disturbance.

3.10.7 Level of Significance After Mitigation

Impacts to unknown TCRs would be less than significant with the implementation of mitigation measures **CUL-1** and **CUL-2** that include an opportunity for tribal participation in monitoring of subsurface excavations.

3.11 Utilities And Service Systems

This section describes the environmental setting for utilities and service systems, including the existing site conditions, regulatory setting, the impacts on utilities and service systems that would result from the Proposed Project, and any mitigation measures that would be needed to reduce significant impacts.

3.11.1 Environmental Setting

The Project site previously supported an active pre-cast concrete manufacturing facility that used existing utility connections at the site. The proposed Project would include new connections to existing gas, water, and sewer lines off of Los Angeles Street. Additionally, it would involve the addition of fire hydrants, storm drains, and drainage basins.

The Infrastructure Element in the City General Plan (City 2008) details the City's utilities and service systems, including water, wastewater, and solid waste. According to the General Plan, the City has adequate domestic water service, public wastewater lines, roads, schools, trash, public facilities, parks and recreation, fire and police services for the level of development projected by the City. Language from the General Plan is included in the sections below.

Water Service

Several different water purveyors serve the City. The City of Azusa Water Department provides basic service to the largest portion of Irwindale from its most northeasterly boundaries to Ornelas Street, including all of the Santa Fe Dam area located to the east of the San Gabriel River Freeway. California-American Water Company, located in the City of San Marino, serves the area north of the Buena Vista Channel to the Duarte boundary with potable water for domestic, landscaping, and fire protection purposes. Finally, the San Gabriel Valley Water Company, located in the City of El Monte, serves approximately 50 customers in the Vulcan's Durbin Pit area as well as the area generally located between Lower Azusa Road and Ramona Boulevard. The Southern California Water Company serves a portion of the westernmost part of the City north of Live Oak Avenue.

The proposed Project site is served by the Valley County Water District (VCWD), which procures its water supplies primarily from the Main Basin and imported water. VCDW serves the southeasterly portion of the City as well as an area generally bound by Arrow Highway, Live Oak Avenue, and the I-605 Freeway.

Wastewater

The Los Angeles County Sanitation Districts (Districts) would be responsible for the treatment of wastewater generated by the project. The proposed Project is located within the jurisdictional boundaries of District 15, which is one of the seventeen districts that form the Join Outfall System. The Joint Outfall System is a regional, integrated sewerage system covers approximately 660 square miles, from the foothills of the San Gabriel Mountains in the north to San Pedro Bay in the south, and from the Los Angeles city limits on the west to the Los Angeles County border on the east. This system provides sewage treatment, reuse and disposal for residential, commercial, and industrial users. The system includes the main Joint Water Pollution Control Plant in Carson, and six satellite water reclamation plants

(WRPs). The six WRPs include La Cañada WRP, Long Beach WRP, Los Coyotes WRP, Pomona WRP, San Jose Creek WRP, and Whittier Narrows WRP.

The District's trunk sewer lines extend throughout the City, with no under-served areas. Wastewater flowing from the Project site would discharge to a local sewer line, which is not maintained by the District, for conveyance to the District's Baldwin Park Trunk Sewer located on Harlan Avenue at Ramona Parkway. The wastewater will be treated at the San Jose Creek Water Reclamation Plant located adjacent to the City of Industry, which has a capacity of 100 mgd and currently processes an average of 58.5 mgd. All biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP would be diverted and treated at the Joint Water Pollution Control Plant located in the City of Carson.

The Los Angeles County Sewer Maintenance District, located in the City of Alhambra, provides maintenance for the City's six miles of sewers on a contract basis, including emergency services on a 24-hour basis.

Solid Waste

The City has an exclusive franchise agreement with Athens Services to provide mixed waste collection services and other available programs to its residents and business community. Athens Services currently transports all of Irwindale's commercial waste to a Materials Recovery Facility, where recyclable materials are sorted and then diverted from local landfills. Several quarry sites throughout the City are designated for landfill use.

Electricity

Southern California Edison provides electricity to over 15 million people in 50,000 square miles of service area, encompassing 15 counties in central, coastal, and southern California. SCE currently provides electricity to the citizens, businesses, and industries within the City of Irwindale. SCE would extend electric service to the Project in accordance with rules and policies for extension of service on file with the California Public Utilities Commission.

Natural Gas

The Southern California Gas Company provides natural gas services to the area and would extend service to the Project site at the time contractual arrangements are made in accordance with SoCalGas policies and extension rules on file with the California Public Utilities Commission.

3.11.2 Regulatory Setting

Federal

Safe Drinking Water Act

The Safe Drinking Water Act (SDWA) was passed in 1974 in order to protect public health by regulating the nation's public drinking water supply. The SDWA gives the Environmental Protection Agency (EPA) the authority to create national health-based standards for drinking water in order to protect against contamination. The SWDA focuses on providing safe drinking water from the tap, protecting the source water, and improving water systems. This act can be applied to every public water system in the nation. The EPA creates national primary drinking water regulations, which set an enforceable maximum contaminant level for contaminants in drinking water. The EPA also sets forth regulations on how to remove contaminates from drinking water.

State

Urban Water Management Planning Act of 1983

The Urban Water Management Planning Act of 1983 requires California's urban water suppliers that either provide over 3,000 acre feet (af) of water annually or serve more than 3,000 connections to submit an UWMP to the Department of Water Resources (DWR) every five years. In these plans, suppliers assess the reliability of their water sources over a 20-year planning horizon considering normal, dry, and multiple dry years. The purpose of these plans is to ensure that water suppliers have adequate water supplies for existing and future demands (CWC 2013).

California Integrated Waste Management Act
The California Integrated Waste Management Act of 1989 (AB 939) requires all counties to prepare a CIWMP. The plan must include the following elements: source reduction, recycling and composting, and environmentally safe transformation and land disposal (CalRecycle 1997).

California Solid Waste Reuse and Recycling Access Act of 1991
The California Solid Waste Reuse and Recycling Access Act of 1991 set the California Department of Resources Recycling and Recovery, also known as CalRecycle, in charge of drafting a model ordinance relating to adequate areas for collecting and loading recyclable materials in development projects. Local agencies, such as the County of Los Angeles, are then required to adopt the model, or an ordinance of their own.

Sustainable Groundwater Management Act

In September 2014, Governor Edmund G. Brown Jr. signed a three-bill package known as the Sustainable Groundwater Management Act (SGMA). The SGMA:

- Provides for sustainable management of groundwater basins
- Enhances local management of groundwater consistent with rights to use or store groundwater
- Establishes minimum standards for effective, continuous management of groundwater

- Provides local groundwater agencies with the authority, technical, and financial assistance needed to maintain groundwater supplies
- Avoids or minimizes impacts for land subsidence
- Improves data collection and understanding of groundwater resources and management
- Increases groundwater storage and removes impediments to recharge
- Empowers local agencies to manage groundwater basins, while minimizing state intervention

Local

Los Angeles County Sanitation Districts

The Sanitation Districts adopted a Wastewater Ordinance effective April 1, 1972, as amended on July 1, 1980, July 1, 1983, November 1, 1989, and July 1, 1998, to protect and finance the operation of the Sanitation Districts' wastewater conveyance, treatment, and disposal facilities. Individual Sanitation Districts also adopted Connection Fee Ordinances in 1981 (which were amended in 1984, 1990, 1992, and 1997). Companies that discharge industrial wastewater to the sewerage system are governed by both the Wastewater Ordinance and the Connection Fee Ordinance for the District in which the discharge is located. These legal mechanisms establish the Sanitation Districts' Industrial Wastewater Discharge Permit, Connection Fee, and Surcharge Programs. The Industrial Wastewater Discharge Permit Program allows for the regulation of industrial wastewater dischargers to protect the public health, environment, and the public sewerage system. The Surcharge Program requires all industrial companies discharging to the Sanitation Districts' sewerage system to pay their fair share of the wastewater treatment and disposal costs. The Connection Fee Program requires all new users of the Sanitation Districts' sewerage system, as well as existing users that significantly increase the quantity or strength of their wastewater discharge, to pay their fair share of the costs for providing additional conveyance, treatment, and disposal facilities (Districts 2019a).

City of Irwindale General Plan

The City of Irwindale General Plan has an infrastructure element that discusses certain utilities, including sewer (City of Irwindale 2008). Aside from a general commitment to maintain the highest service standards, the General Plan does not contain any specific policies that directly apply to the proposed Project. Relevant General Plan policies are as follows:

Issue Area – Maintenance of Service Standards. City of Irwindale will continue to maintain the highest levels of public service to respond to the existing and future demand for such services.

> *Infrastructure Element Policy 1*. The City will continue to support the efforts of the City of Irwindale Public Works Department in maintaining the highest service standards feasible.

Infrastructure Element Policy 2. The City will continue to cooperate with those utility providers in the City to ensure that sufficient infrastructure capacity is available to meet current and future service demands (City of Irwindale 2008).

3.11.3 Impact Analysis

According to Appendix G of the CEQA Guidelines, a project would have significant effect on the utilities environment, if the project would result in any of the following:

1. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm drainage electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?

2. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?

3. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

4. Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

5. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

3.11.3.1 Project Impacts Analysis

Impact 3.11.1 New or Expanded Facilities

Threshold:	*Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities, the construction of which could cause significant environmental effects?*

The proposed Project would install connections to existing utility lines, including gas, water, and sewer off Los Angeles Street (Figure 3.11-1 Conceptual Utility Plan). Small encroachments into adjacent public rights of way of developed/paved streets to connect to existing utilities will be required to serve the Project. Trenching for new onsite utility lines would be required. Physical disturbance for the installation of these new utility lines would be limited and largely indistinguishable from overall grading for development on the proposed Project site.

Natural Gas and Electric Power

According to the City's General Plan, the Southern California Gas Company maintains lines ranging in size from 2-inch medium pressure lines to 8-inch high pressure lines to serve Irwindale customers. There are

no under-served areas, and the company does not foresee any constraints to substantial future development within the City. Additionally, SCE provides basic electrical service for all residential and non-residential customers within the City. Power is available to most service areas, with underground lines situated along several of the major streets. There are no underserved areas, and there are no constraints to additional electric service needed for future development (City of Irwindale 2008).

As discussed in Chapter 3.3 Energy, the increase in electricity usage as a result of the Project would constitute an approximate 0.012 percent increase in the typical annual electricity consumption attributable to non-residential uses in Los Angeles County. Project increases in natural gas usage across Los Angeles County would also be negligible at 0.005 percent. The Project would adhere to all federal, State, and local requirements for energy efficiency, including the Title 24 standards. The Project would be required to comply with Title 24 building energy efficiency standards, which establish minimum efficiency standards related to various building features, including appliances, water and space heating and cooling equipment, building insulation and roofing, and lighting. Implementation of the Title 24 standards significantly reduces energy usage. As such, impacts to gas and electric utilities would be **less than significant**.

Water

According to the VCWD 2013 Water Master Plan, the Project would consume approximately 68.73 acre feet per year (AFY) (VCWD 2014). VCWD indicates that it is confident that it can successfully obtain a combination of prescriptive rights, groundwater leases and purchases, and replenishment water to achieve a production of water up to 9,565.6 AFY in any given year out to year 2035. Build out of current land uses and population growth were considered to project this future water demand (VCWD 2016). Water supplies are further discussed in Impact 3.11.2 below. The impact on water facilities would be **less than significant**.

Storm Drainage

As discussed in Section 3.6 Hydrology and Water Quality, the Project would increase impervious surfaces throughout the site and would require the installation of storm drainage infrastructure to ensure that storm waters properly drain from the project site. The site-specific LID report indicates that the proposed Project condition 50-year peak flow rates from the proposed Project site would be higher than existing condition rates. Therefore, detention in the onsite truck yards would reduce proposed condition discharge to below existing condition discharge. The proposed onsite storm drains would be sized during the project site's final design phase to restrict outflow to the desirable discharge rates. Additionally, an underground CMP detention system would be utilized to treat the SWQDv and route stormwater greater than the 85th percentile into the mainline. As the developed peak flows for the Project site would be limited and metered through the use of onsite detention basins, there would be adequate capacity in the existing Los Angeles Street storm drain system for the proposed flows. Thus, the onsite and offsite facilities would be adequate to collect and convey stormwater runoff from the Project site and no additional direct connections would be required. Impacts associated with the existing and planned storm drain systems would be **less than significant**.

Wastewater Facilities

Wastewater generated at the proposed Project site would discharge to the local sewer line for conveyance to the District's Baldwin Park Trunk Sewer, located at Harlan Avenue in Ramona Parkway. The District's 18-inch diameter trunk sewer has a capacity of 4.3 million gallons per day (mgd) and conveyed a peak flow of 3.2 mgd when last measured in 2013 (Districts 2019b). The wastewater would be treated at the San Jose Creek WRP located adjacent to the City of Industry, which has a capacity of 100 mgd and currently processes an average of 58.5 mgd. All biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP would be diverted and treated at the Joint Water Pollution Control Plant located in the City of Carson. According to a comment letter received from the District (Appendix A), the expected increase in average wastewater flow from the Project is 99,242 gallons per day, after the existing structures have been demolished (Districts 2019b). This would represent only a nominal increase compared with the District's current demands and would not result in either plant exceeding sewage treatment capacities. Impacts would be **less than significant**.

Under California Health and Safety Code, the applicant would be required to pay connection for both water and wastewater service connections (Districts 2019b). These capital facilities fees must be paid before the Project is permitted to discharge into the District's Sewerage System. Fees are used to fund improvements needed to continue serving the applicable service area, construct incremental service expansion to accommodate the Project, and comply with State Water Resources Control Board treatment requirements. Impacts with respect to construction of new (or expanded) wastewater treatment facilities would, therefore, be **less than significant**.

Overall, the Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm drainage, electric power, natural gas, or telecommunications facilities. Impacts to existing utilities would be **less than significant.**

Impact 3.11.2 Water Supplies

Threshold:	*Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?*

The proposed Project site is served by the VCWD, which procures its water supplies primarily from the Main Basin and imported water. According to the District's 2015 UWMP (2016), the minimum water supplies available at the end of an average water year, a single dry year, and multiple dry years would be at least equal if not greater than the District's water demand. VCWD's water demand estimates are summarized in the tables below. These estimates indicate the District's water supplies are projected to meet water demand through the forecast horizon year.

Table 3.11-1. Normal Year Water Supply and Demand Comparison (AF)

	2020	2025	2030	2035	2040
Supply Totals	8,996	9,147	9,300	9,456	9,614
Demand Totals	8,996	9,147	9,300	9,456	9,614
Difference	0	0	0	0	0

Source: VCWD Urban Water Management Plan (2016)

Table 3.11-2. Single Dry Year Water Supply and Demand Comparison (AF)

	2020	2025	2030	2035	2040
Supply Totals	6,837	6,952	7,068	7,187	7,307
Demand Totals	6,837	6,952	7,068	7,187	7,307
Difference	0	0	0	0	0

Source: VCWD Urban Water Management Plan (2016)

Table 3.11-3. Multiple Dry Year Water Supply and Demand Comparison (AF)

		2020	2025	2030	2035	2040
First Year	Supply totals	6,657	6,769	6,882	6,997	7,114
	Demand totals	6,657	6,769	6,882	6,997	7,114
	Difference	0	0	0	0	0
Second Year	Supply totals	6,747	6,860	6,975	7,092	7,211
	Demand totals	6,747	6,860	6,975	7,092	7,211
	Difference	0	0	0	0	0
Third Year	Supply totals	6,837	6,952	7,067	7,187	7,307
	Demand totals	6,837	6,952	7,067	7,187	7,307
	Difference	0	0	0	0	0

Source: VCWD Urban Water Management Plan (2016)

The Project proposes a 528,710 square foot industrial building on a speculative basis. As the future tenant(s) are unknown, a Light Industrial use is conservatively assumed for purposes of water utility demand. According to the VCWD 2013 Water Master Plan (WMP), the Project would consume 0.13 AFY/1,000 SF, based on a Light Industrial land use. Therefore, the Project would consume approximately 68.73 AFY (VCWD 2014). VCWD indicates that it is confident that it can successfully obtain a combination of prescriptive rights, groundwater leases and purchases, and replenishment water to achieve a production of water up to 9,565.6 AFY in any given year out to year 2035. Build out of current land uses and population growth were considered to project this future water demand (VCWD 2016).

Because the Project is consistent with VCWD's water supply projections that indicate there are sufficient water supplies to serve the project and region, and because the development/connection fees required for Project implementation would help mitigate future new or expanded entitlements that potentially may be needed with future regional growth, Project impacts are considered **less than significant.**

Impact 3.11.3 Sewer Capacity

Threshold:	*Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?*

As discussed above in Impact 3.11.1, the wastewater generated at the proposed Project site would discharge to the local sewer line for conveyance to the District's Baldwin Park Trunk Sewer, located at Harlan Avenue in Ramona Parkway. The District's 18-inch diameter trunk sewer has a capacity of 4.3 million gallons per day (mgd) and conveyed a peak flow of 3.2 mgd when last measured in 2013 (District 2019).

The wastewater would be treated at the San Jose Creek WRP located adjacent to the City of Industry, which has a capacity of 100 mgd and currently processes an average of 58.5 mgd. All biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP would be diverted and treated at the Joint Water Pollution Control Plant located in the City of Carson.

The expected increase in average wastewater flow from the Project is 99,242 gallons per day, after the existing structures have been demolished (Districts 2019a). This slight increase would represent only a nominal increase (0.002%) compared with the District's current demands and would not prevent this facility or other facilities in the Joint Outfall System from operating in compliance with RWQCB requirements. Furthermore, the applicant would be required to pay connection fees to the utility service provider (Districts 2019b). These fees must be paid before connection permits are issued. Among other things, these fees are used to fund improvements needed to continue serving the applicable service area, ensure adequate capacity, and comply with State Water Resources Control Board treatment requirements.

For these reasons, impacts would be **less than significant.**

Impact 3.11.4 Solid Waste Reduction Goals

Threshold:	*Would the project generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*

Waste would be generated during the construction and operation phases of the proposed Project. Construction waste would primarily consist of discarded materials and packaging. Based on the building square footage of 528,170 and the US EPA's construction waste generation factor of 4.34 pounds per sq ft, approximately 1,146 tons of waste would be generated during the construction phase. During long-term operations, solid waste from the proposed Project would be hauled by Athens Services. Based on a Manufacturing/Warehouse waste generation factor of 1.42 pounds/day/100 sq ft obtained from

CalRecycle, the long-term, ongoing operation of the proposed Project could generate approximately 7,508 pounds of waste per day (CalRecycle 2019a). Any materials that are not composted or recycled by Athens Services would be transferred to the Mid-Valley Sanitation Landfill in the City of Rialto. The landfill is permitted to accept a max of 7,500 tons of solid waste per day. It has a remaining capacity of 61,219,377 cubic yards and it anticipated to close in 2033 (CalRecycle 2019b).

Although a precise quantity of construction and demolition debris cannot be specifically determined at this time, mandatory compliance with all applicable state and local regulations governing solid waste, source reduction, and recycling would reduce the amount of construction waste entering landfills. Therefore, conformance with the various state and local source reduction and recycling programs would ensure that the project would not contribute excessive amounts of solid waste to landfills.

For these reasons, impacts would be **less than significant.**

Impact 3.11.5 Solid Waste Regulations

Threshold:	*Would the project comply with federal, state, and local statutes and regulations related to solid waste?*

The proposed Project would be required to comply with all Resource Conservation and Recovery Act (RCRA) Regulations, including Title 40 of the Code of Federal Regulations (CFR), as well as City of Irwindale waste reduction programs. In accordance with Assembly Bill 341, the Project would be required to work with Athens Services to implement a commercial recycling program during the operational phase.

As discussed above, the Project would comply with the various state and local source reduction and recycling programs. The implementation of these programs and policies would reduce the amount of solid waste generated be the proposed Project and diverted to landfills.

For these reasons, impacts would be **less than significant.**

3.11.4 Cumulative Impacts

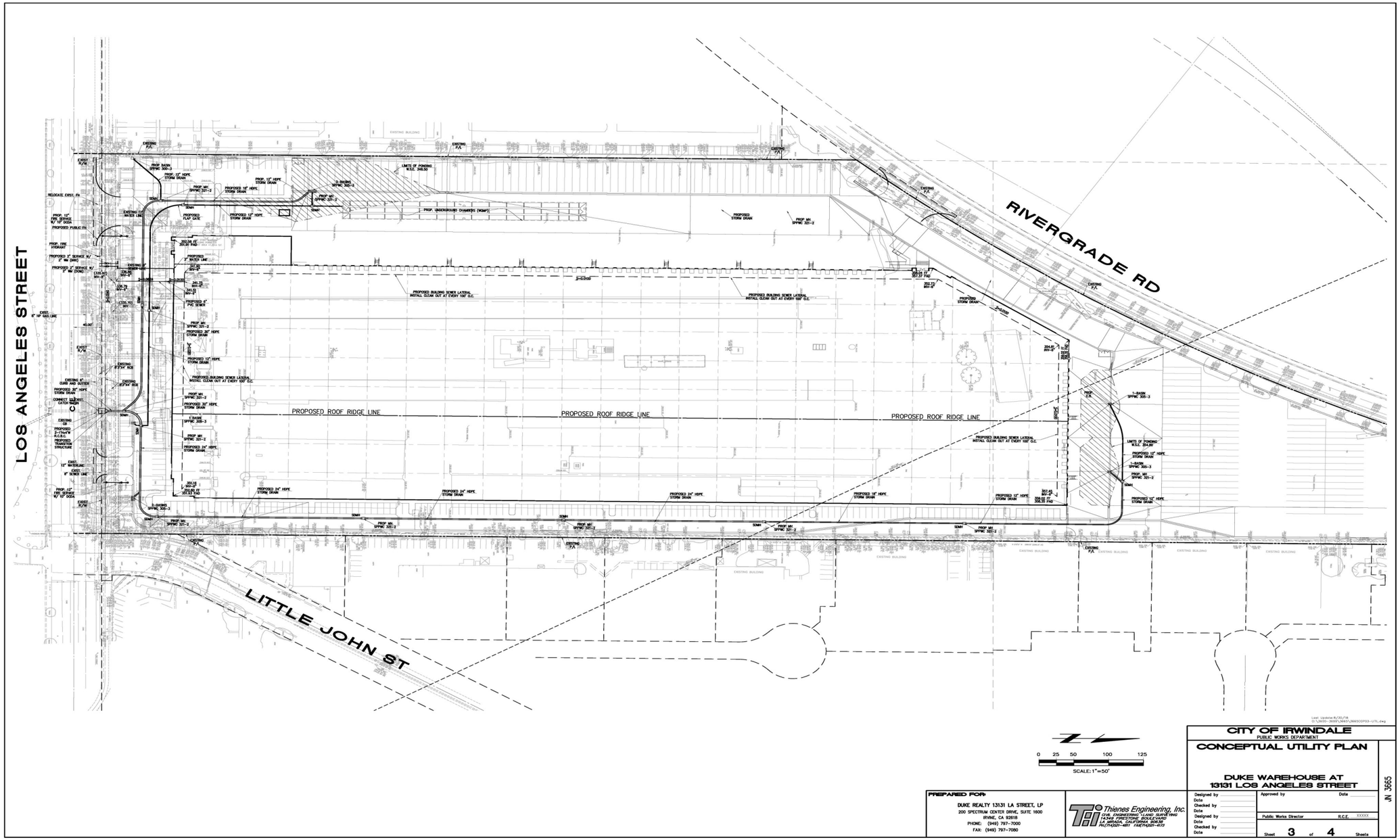
The Project is consistent with utility and service district projections that indicate there is sufficient capacity in existing and planned facilities to serve the Project. As the Project is consistent with General Plan land use and zoning classifications it is not anticipated to have a significant impact on utility service capabilities based on adopted plans and policies. The Project would pay required utility development/connection fees to support Project implementation and help mitigate future new or expanded entitlements that may be needed with future regional growth. Cumulative impacts on Utilities and Services Systems are considered **less than significant.**

3.11.5 Mitigation Measures

No mitigation measures are required.

3.11.6 Level of Significance After Mitigation

No mitigation measures are required and impacts would be less than significant.



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ENVIRONMENTAL CONSULTANTS

Figure 3.11-1. Conceptual Utility Plan

2019-030 Irwindale Industrial Spec Tilt-Up Project

4.0 ENVIRONMENTAL CONSIDERATIONS

This section provides brief discussions of other topics specifically mandated by CEQA, as follows: significant unavoidable adverse impacts, effects found not to be significant, significant irreversible environmental changes, and growth-inducing impacts.

4.1 Significant Unavoidable Adverse Impacts

This section is prepared in accordance with Section 15126.2(b) of the CEQA Guidelines, which requires the discussion of any significant environmental effects that cannot be avoided if a project is implemented. These include impacts that can be mitigated, but cannot be reduced to a less than significant level. Eleven issue areas and their associated environmental impacts were analyzed in detail in Chapter 3.0. According to the environmental impact analysis presented in Chapter 3.0, the Project would result in significant and unavoidable adverse impacts to air quality, greenhouse gases, and cumulative-level traffic impacts.

4.2 Effects Found Not To Be Significant

Section 15128 of the CEQA Guidelines requires a statement that briefly indicates the reasons that various possible significant effects of a project were determined not to be significant and were, therefore, not discussed in detail in the EIR. As stated in the CEQA Guidelines, such a statement may be contained in an attached copy of an Initial Study. The Initial Study for the proposed project is included in this EIR as Appendix A. As described and substantiated in Appendix A, the following issue areas were not found to be significant and were not further analyzed in the EIR:

- Aesthetics
- Agriculture and Forestry Resources
- Biological Resources
- Geology and Soils
- Mineral Resources
- Population and Housing
- Public Services
- Recreation
- Wildfire

4.3 Significant Irreversible Environmental Changes

Pursuant to Section 15126.2(d) of the CEQA Guidelines, an EIR must address any significant irreversible environmental change which would be caused by the Proposed Project should it be implemented. This discussion would typically include uses of nonrenewable resources during the initial and continued phases of a project that may be irreversible where a large commitment of such resources makes removal or nonuse thereafter unlikely. Examples cited include 1) primary impacts and secondary impacts (such as

highway improvements that provide access to a previously inaccessible area), that generally commit future generations to similar uses;, and 2) irreversible damage that could result from environmental accidents associated with a project.

In the instance of the Proposed Project, development of an industrial warehouse use would result in the construction of the industrial warehouse building and infrastructure on land that is currently vacant, but designated for industrial/business park use and zoned (M-2) Heavy Manufacturing. While consumption of energy supplies and non-renewable or slowly-renewable resources would occur with Project development, the site has been historically in use with manufacturing operations (i.e. hollow core concrete manufacture). The City's General Plan and zoning reflect a long-term commitment to urban uses.

Pursuant to Section 15127 of the CEQA Guidelines. Limitations on Discussion of Environmental Impact, the information required by Section 15126.2(d) concerning irreversible changes need be included in EIRs prepared only in connection with any of the following activities:

- The adoption, amendment, or enactment of a plan, policy or ordinance of a public agency;
- The adoption by a Local Agency Formation Commission of a resolution making determinations; or
- A project which will be subject to the requirement for preparing an environment impact statement pursuant to the requirements of the National Environmental Policy Act if 1969, 42 U.S.C 4321-4347.

In the instance of the Proposed Project, none of the foregoing activities apply. In particular, and as discussed previously, the Project is consistent with the existing General Plan and zoning, and does not require adoption, amendment or enactment of any plan, policy or ordinance of the City of Irwindale. Therefore, no further discussion of this topic in this EIR is required.

4.4 Growth-Inducing Impacts

According to Section 15126.2(e) of the CEQA Guidelines, growth-inducing impacts of the proposed Project shall be discussed in the EIR. Growth-inducing impacts are those effects of the Project that might foster economic or population growth or the construction of new housing, either directly or indirectly, in the surrounding environment. Induced growth is any growth that exceeds planned growth and results from new development that would not have taken place without implementation of the project. For example, development of a project may require additional housing, goods, and services associated with the population increase caused by, or attracted to, the new project. Growth induced from a project may result in significant adverse impacts if the growth is not consistent with the land use plans and growth management plans and policies for the area affected. Thus, it is important to assess the degree to which the growth accommodated by a project would conflict with any applicable land use plan, policy, or regulation.

The environmental effects of induced growth are indirect impacts of the proposed Project. Indirect effects of growth could result in significant, adverse environmental impacts, which could include increased demand on community or public services, increased traffic and noise, degradation of air and water quality, and conversion of agricultural land and open space to developed uses. The Population and Housing

section of the Initial Study (Appendix A) discusses the potential for unplanned population growth in the Project area, either directly or indirectly, and concludes the potential for unplanned growth would be less than significant.

The City's General Plan is consistent with the baseline growth projections contained in Southern California Association of Governments (SCAG) regional planning documents, which estimates that there will be 500 households and 21,500 jobs in Irwindale by 2040 (SCAG 2015). The primary objectives of the General Plan's Community Development Element are to assist in the management of future growth, to improve the City's physical appearance, and to minimize potential land use conflicts. According to the Community Development Element, many of the City's larger mining properties available for residential, commercial, and industrial development are becoming available for redevelopment in the recent years. The City anticipates that these properties will attract new businesses and support job growth locally and regionally (City of Irwindale 2008).

The proposed Project aligns with these redevelopment goals and would provide additional employment on site. The Project site was used as a concrete manufacturing business from 1967 until 2017 and is designated "Industrial/Business Park" in the City's General Plan. The Project would demolish existing buildings onsite and construct an industrial warehouse with associated parking, landscaping, and utilities. Thus, the Project would be consistent with the site's current zoning designation of Heavy Manufacturing (M-2). The site is served by existing public roadways and utility infrastructure already installed beneath public rights of way that adjoin the property. The Project does not include the extension of new roads or propose major new infrastructure that could indirectly induce population growth.

According to SCAG, Irwindale is expected to employ approximately 21,500 people by 2040 (SCAG 2015). The Project would contribute new jobs that would be aligned with employment growth projections that have been calculated by SCAG. Temporary project-related construction jobs would likely be filled by existing residents in Irwindale and surrounding areas. Similarly, industrial/warehouse employees would likely come from the existing labor pool in Irwindale and surrounding communities, and accordingly, the Project would not result in growth that was not already anticipated by the City of Irwindale General Plan or other regional planning documents.

The City of Irwindale will ensure that the rate of residential growth can be accommodated in light of the City's physical and economic constraints and that this growth can be served by public services and infrastructure. It is important to note that the City's employment base draws employees from adjacent jurisdictions in Los Angeles, Riverside and San Bernardino Counties; the majority of people who work in the City do not live in Irwindale. Therefore, it is not anticipated that the employment generated by the proposed Project would lead to a substantial influx of residents to the City. The Proposed Project would not generate substantial population growth, and would not result in significant adverse secondary effects related to induced growth.

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5.0 ALTERNATIVES

The alternatives analysis consists of the following components: an overview of California Environmental Quality Act (CEQA) requirements for alternatives analysis, descriptions of the alternatives evaluated, a comparison between the anticipated environmental effects of the alternatives and those of the Proposed Project, and identification of an environmentally superior alternative.

5.1 Introduction

CEQA requires that an EIR consider a reasonable range of alternatives to a proposed project that can attain most of the basic project goals but has the potential to reduce or eliminate significant adverse impacts of the proposed project and may be feasibly accomplished in a successful manner, considering the economic, environmental, social, and technological factors involved. An EIR must evaluate the comparative merits of the alternatives (CEQA Guidelines Section 15126.6(a), (d) and (e)). If certain alternatives are found to be infeasible, the analysis must explain the reasons and facts supporting that conclusion.

Section 15126.6(d) also requires that, if an alternative would cause one or more significant effects in addition to those caused by a proposed project, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed. One of the alternatives analyzed must be the "No Project" alternative (CEQA Guidelines Section 15126.6(e)). The EIR must also identify alternatives that were considered by the lead agency but were rejected as infeasible during the scoping process and should briefly explain the reasons underlying the lead agency's determination (CEQA Guidelines Section 15126.6(c)).

CEQA Guidelines Section 15126.6(e)(2) requires that the EIR identify the environmentally superior alternative. If that alternative is the No Project Alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives. The environmentally superior alternative is discussed in Section 5.4.

5.2 Development of Project Alternatives

This section discusses the reasoning for selecting and rejecting alternatives. This section also summarizes the assumptions identified for the alternatives. The range of alternatives included for analysis in an EIR is governed by the "rule of reason." The primary objective is formulating potential alternatives and choosing which ones to analyze to ensure that the selection and discussion of alternatives fosters informed decision-making and informed public participation. This is accomplished by providing sufficient information to enable readers to reach conclusions themselves about such alternatives. This approach avoids assessing an unmanageable number of alternatives or analyzing alternatives that differ too little to provide additional meaningful insights about their environmental effects. The alternatives addressed in this Draft EIR were selected in consideration of one or more of the following factors:

- The extent to which the alternative would avoid or reduce any of the identified significant effects of the project and yet would accomplish most of the basic objectives of the project.

- The feasibility of the alternative, taking into account site suitability and surrounding existing land uses, and consistency with applicable public plans, policies, and regulations.
- The appropriateness of the alternative in contributing to a reasonable range of alternatives necessary to permit a reasoned choice.

The alternatives analyzed in this Draft EIR were ultimately chosen based on each alternative's ability to feasibly attain the basic project objectives while avoiding or reducing one or more of the project's significant effects. The analysis provides readers with adequate information to compare the effectiveness of identified mitigation or significant adverse impacts and to enable readers to make decisions about the project. CEQA requires environmental impact reports to address a reasonable range of reasonable alternatives, but not all potential alternatives.

5.3 Alternatives Considered but Rejected

5.3.1 New or Reestablished Concrete Manufacturing Use

This alternative would propose to reestablish a concrete manufacturing business on the site consistent with prior historic use of the site. This alternative was rejected for several reasons. First, as evidenced by the closure of prior concrete manufacturing use at the site, the market for prefabricated concrete and hollow core concrete materials has diminished with the mining of nearby quarries in decline and their conversion to other viable uses likely in the future. Second, the remaining existing buildings and structures at the site are in disrepair, would not be usable, and are scheduled for demolition. Finally, the applicant has acquired the site to establish a viable industrial warehouse use that meets project objectives for proximity to regional markets and goods movement corridors, and that conforms with City General Plan and zoning. Therefore, this alternative is not feasible and has been rejected.

5.4 Alternatives Carried Forward For Analysis

5.4.1 Alternative 1 – No Project/No Build

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate the specific alternative of "no project" along with its impact. As stated in this section of the CEQA Guidelines, the purpose of describing and analyzing a no project alternative is to allow decision makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. As specified in Section 15126.6(e)(3)(B) of the CEQA Guidelines, the no project alternative for a development project consists of the circumstance under which a proposed project does not proceed. Section 15126.6(e)(3)(B) further states that "in certain instances, the no project alternative means 'no build' wherein the existing environmental setting is maintained."

Under Alternative 1, the project site demolition of the 20,000 SF brick and concrete office building, a small mobile office, an approximate 2,883 SF office building, and an approximate 9,618 SF maintenance building would still occur, but the site would remain vacant indefinitely. While the project site was previously occupied by a concrete manufacturing business, it was vacated by that business in 2017. And the proposed warehouse, parking lots, and landscaping would not be constructed on the project site.

The No Project/No Build Alternative would result in the avoidance of environmental impacts relative to the proposed Project. Table 5.0-1 provides a summary of the comparison of the environmental effects of the Project to the alternatives presented in this section, including the No Project/No Build Alternative.

5.4.1.1 Ability to Meet Project Objectives

Alternative 1 would not achieve any of the project objectives. The No Project/No Build alternative would not provide a warehouse that is accessible to regional markets. No economic use of the site consistent with the existing General Plan and zoning would occur. An industrial/warehouse use compatible with surrounding uses and in conformance with established City Commercial and Industrial Design Guidelines would not be developed. No additional employment opportunities would be created at the project site.

5.4.1.2 Comparison of the Effects of Alternative 1 to the Proposed Project

Aesthetics

Under the No Project/No Build Alternative, the visual character and quality of the vacant site would remain as it currently exists. The Project site does not contain any unique aesthetic resources, nor does it serve as a prominent scenic vista. The vacant site is largely devoid of vegetation and provides no significant visual amenity for surrounding uses. No structures or landscaping would be introduced on the property beyond that which occurs under existing conditions. However, as with the Proposed Project, impacts to aesthetics would be less than significant.

Agriculture

Currently, the project site and its surrounding areas are entirely developed and not used for agricultural or forestry uses. It is not zoned for agricultural use, nor is it under a Williamson Act contract. Alternative 1 would not include any ground-disturbing physical impacts. Therefore, there would be no impact to agriculture, which is identical to the proposed Project.

Air Quality

Under Alternative 1, no development would occur on the project site; therefore, there would be no potential sources of short-term (construction) or long-term (operational) air pollutant emissions associated with warehouse and light industrial land uses. The Project's short- and long-term air quality impacts, including exceedance of SCAQMD NOx standards, would be avoided under the Alternative. Thus, the significant long-term operational impacts related to air quality associated with the proposed project would be avoided under Alternative 1.

Biological Resources

The No Project/No Build Alternative would leave the property in its existing condition. The site is located in a heavily developed area zoned for heavy manufacturing and is devoid of significant biological resources. No impacts to biological impacts would occur. Impacts to biological resources would be similar to the proposed Project.

Cultural Resources

No known historic, archaeological, unique geological features, or human remains are present on the Project site under existing conditions as a result of the CHRIS records search and other records sources. Construction impacts associated with the proposed project would be avoided because no development would occur on the project site under the No Project/No Build Alternative. The existing structures would remain in place and would remain vacant, unused industrial structures. The potential for uncovering previously unknown archaeological or paleontological resources would be avoided because excavation would not take place on the project site. Impacts to cultural resources would be less than the proposed Project.

Energy

Energy impacts associated with the proposed Project would be avoided because no development would occur on the project site under the No Project/No Build Alternative. The Alternative would not require any increase in natural gas or electricity associated with construction, operation, or transportation. Thus, energy impacts associated with construction and operation of the proposed Project would be avoided under Alternative 1.

Geology and Soils

This Alternative would not construct any buildings on the project site. As such, no impact would occur with respect to earthquake fault zones, seismic ground shaking, liquefaction, and landslides. The site is not at risk due to instability, expansive soils, or erosion. No impacts to paleontological resources or unique geologic resources are anticipated. As such, impacts to geology and soils would be avoided relative to the proposed Project.

Greenhouse Gases

Under the No Project/No Build Alternative, no new development would occur on the Project site; therefore, there would be no potential sources of near-term or long-term GHG emissions. Selection of this Alternative would avoid the proposed Project's near- and long-term effects associated with GHG emissions. The Project impact associated with exceeding the SCAQMD industrial threshold would be avoided. Impacts would be less than the proposed Project.

Hazards and Hazardous Materials

Because no development would occur under the No Project/No Build Alternative, no impacts related to hazards or hazardous materials would occur. With mitigation the proposed Project impacts associated with hazards and potential use, storage or transport of hazardous materials would be less than significant. However, selection of the No Project/No Build Alternative would avoid the proposed Project's potential impacts related to hazards and hazardous materials.

Hydrology and Water Quality

No changes to existing hydrology and drainage conditions would occur under the No Development Alternative. No storm water improvements would be constructed and rainfall would be discharged from

the site as sheet flow, as occurs under existing conditions. Although the proposed Project would alter existing ground contours of the Project site, which would result in changes to the site's existing drainage patterns, surface water runoff discharged from the Project site would be reduced under the proposed Project. Additionally, much of the stormwater leaving the site would not be filtered via Best Management Practices (BMPs), and therefore would continue to contain sediment, as occurs under existing conditions. Accordingly, surface water runoff and long-term sedimentation impacts and would be greater than impacts that would occur under the proposed Project.

Land Use and Planning

The No Development Alternative would leave the property in its existing condition as vacant, disturbed, undeveloped land and the property would not be developed in accordance with the General Plan Business Park/Light Industrial land use designation. Thus, selection of the No Project/No Build Alternative would not establish a viable land use for the site consistent with local plans, policies and programs.

Mineral Resources

The Project is not located on land associated with a past, current, or anticipated mining location. As with the proposed Project, no mining activities would occur from this Alternative. No impacts to mineral resources would occur, as with the proposed Project.

Noise

Noise impacts associated with the proposed project would be avoided because no development would occur on the project site under the No Project/No Build Alternative. No noise would occur resulting from construction or operation at the project site. Therefore, impacts to noise would be less than the proposed Project.

Population and Housing

The No Project/No Build Alternative would not generate any new employment in the City. This Alternative would not result in population growth, would not displace existing housing, and would not require additional housing construction. As such, no impacts to population and housing would occur, which is similar to the proposed Project.

Public Services

Under Alternative 1, impacts to public services would be reduced when compared to the proposed project. Alternative 1 would not construct any facilities and the property would remain vacant. Therefore, Alternative 1 would result in reduced impacts when compared to the proposed project.

Recreation

No impact to existing neighborhood parks would occur due to implementation of this Alternative. The Alternative would not increase local or regional population that would result in any increase in demand for neighborhood or regional parks. Impacts would be similar to the proposed Project.

Transportation

Traffic impacts associated with the proposed project would be avoided under this Alternative. Significant Project impacts to several study area intersections would be avoided. Impacts would be less than the proposed Project.

Tribal Cultural Resources

Under this Alternative, the potential for uncovering previously unknown archaeological resources would be avoided because excavation would not take place on the project site. As such, no impacts to tribal cultural resources would occur.

Utilities and Service Systems

This Alternative would not require connections to existing utility lines, including gas, water, and sewer. As such, water use, energy consumption, wastewater generation, and solid waste generation would be less when compared to the proposed Project. Overall, impacts to utilities would be avoided.

Wildfire

As with the proposed Project, this Alternative is not located within or near a very high fire hazard severity zone. The project site is located within a heavily industrialized area and is not in the immediate vicinity of any natural or wildlife areas. The site would remain vacant as it currently exists. No impact to wildfire would occur, which would be identical to the proposed Project.

5.4.2 Alternative 2 – Reduced Intensity

The Reduced Intensity Alternative was identified by the Lead Agency to evaluate the comparative environmental impacts associated with construction of a project with less building square footage. Under this Alternative, a smaller warehouse with similar landscaping would be constructed. The Project's 528,710 gross SF building area would be reduced by 15 percent, which yields a warehouse building of approximately 450,000 gross SF as compared to the proposed Project. The building footprint would remain within the footprint of the proposed Project. Access driveways to the site would remain the same.

5.4.2.1 Ability to Meet Project Objectives

A warehouse that is 450,000 SF would meet some of the project objectives. A warehouse of a reduced size would be built on a site that is accessible to regional markets, would be consistent with the existing General Plan and zoning, and could be compatible with surrounding uses and conforms with established City Commercial and Industrial Design Guidelines. If the reduction in the building footprint occurred by narrowing the building width and moving the east side of the building slightly further to the west, a slightly greater buffer distance between truck loading docks and the nearest residential properties to the east could be created. However, some of the Project's economic objectives would be met to a lesser degree than they would be met under the proposed Project. For example, a smaller warehouse would require fewer employees, thereby reducing the Project's ability to foster economic growth and reducing the range of employment opportunities that would be provided. Moreover, it is unclear whether the

market for potential industrial warehouse users at this location would be materially reduced with the reduction in total warehouse building size.

5.4.2.2 Comparison of the Effects of Alternative 2 to the Proposed Project

Aesthetics

Under Alternative 2, the visual character and quality of the site and property would be very similar to the proposed Project. Even with the reduction in building intensity the aesthetics of the building and site, as seen from off-site, would be similar. There are no public views of scenic vistas within the vicinity of the proposed Project site, nor are there any designated state scenic highways in the vicinity. A lighting plan will be submitted to the City and the building design would fully comply with the City of Irwindale Commercial and Industrial Design Guidelines. Impacts to aesthetics would be similar to those of the proposed Project.

Agriculture

The proposed site and its surrounding areas are entirely developed and not used for agricultural or forestry uses. It is not zoned for agricultural use, nor is it under a Williamson Act contract. Therefore, this Alternative would have no impact on agriculture, which is identical to the proposed Project.

Air Quality

Alternative 2 would result in the emission of pollutants during short-term construction and long-term operational activities, as with the proposed Project. Under this Alternative, the construction schedule would be slightly reduced as compared to the proposed Project, due to the approximately 15 percent reduction in building area. Additionally, pollutant emission levels would be proportionally less than the proposed Project.

The Project could produce odors during proposed construction activities resulting from construction equipment exhaust, and applications of asphalt or architectural coatings. However, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, any odors emitted during construction would be temporary, short-term, and intermittent, and would cease with the completion of the respective phase of construction. In addition, construction activities on the Project site would be required to comply with SCAQMD Rule 402, which prohibits the discharge of odorous emissions that would create a public nuisance.

During long-term operation, the project site would contain a warehouse building, the operating characteristics of which are not typically associated with objectionable odors. The temporary storage of refuse associated with the Alternative's long-term operational use could be a potential source of odor; however, project-generated refuse is required to be stored in covered containers and removed at regular intervals in compliance with the City's solid waste practices, thereby precluding any significant odor impact. Like the proposed Project, the Alternative would be required to comply with SCAQMD Rule 402 during long-term operation. As such, long-term operation of the Alternative would not create objectionable odors affecting a substantial number of people.

Overall, air quality impacts of the Reduced Density Alternative would be reduced proportionally to the 15% building square footage reduction. However, even with implementation of CARB and SCAQMD recommendations in mitigation measure **AQ-1**, it is likely that heavy-duty truck travel would still contribute to the SCAQMD daily significance threshold for industrial uses being exceeded. The Alternative would be considered cumulatively considerable in terms of its effect on regional air quality. However, impacts would be slightly less than the proposed Project.

Biological Resources

The site is highly disturbed from past uses and does not contain habitat for sensitive biological resources. No wetlands or waters are located on the site. Although t two isolated trees occur within the north central portion of the Proposed Project site, and several trees occur along the Proposed Project site frontage with Los Angeles Street, removal of these trees would still occur with Alternative 2 These trees provide possible nesting habitat for raptors in addition to passerine species. Although removal of these trees would not be considered a significant biological resource impact, all nesting migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA). To ensure that there would be no impacts to protected active nests, a City condition of approval would be established assuring compliance with the MBTA. As with the proposed Project, this alternative would not have a significant impact on biological resources.

Cultural Resources

No known historic, archaeological, unique geological features, or human remains are present on the Project site under existing conditions as a result of the CHRIS records search and other records sources. However, it is possible that intact archaeological deposits are present at subsurface levels, thus significant impacts may occur from the discovery of unknown resources during ground disturbing activities from Project construction. Impacts to unknown archaeological resources would be less than significant with the implementation of Mitigation Measure **CUL-1** that includes an opportunity for tribal participation in monitoring of subsurface excavations. In the unexpected event that human remains are unearthed during construction activities, impacts would be potentially significant, and as such, implementation of Mitigation Measure **CUL-2** is required. With the implementation of these two mitigation measures, cultural resource impacts from the Reduced Density Alternative would be similar to those of the proposed Project.

Energy

Like the proposed Project, Alternative 2 would be required to comply with California Energy Efficiency Standards for Nonresidential Buildings (Title 24) and the 2016 Building and Energy Efficiency Standards adopted by the Californian Energy Commission (CEC), which include new construction of nonresidential buildings. The Alternative would also be required to comply with the latest California Green Building Standards (Title 24, California Code of Regulations) that establish planning and design standards for sustainable site development, energy efficiency (in excess of California Energy Code Requirements) and water conservation, among other environmental design factors. As a result of the 15% reduction in building square footage, energy impacts would be proportionally reduced and therefore slightly lower than the proposed Project.

Geology and Soils

Alternative 2 would be constructed on the same site as the proposed Project. As such, a less than significant impact would occur with respect to earthquake fault zones, seismic ground shaking, liquefaction, and landslides. The site is not at risk due to instability, expansive soils, or erosion. No impacts to paleontological resources or unique geologic resources are anticipated. As such, impacts to geology and soils would be the same as the proposed Project.

Greenhouse Gases

Construction-related activities that would generate greenhouse gas (GHG) emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Proposed Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Operation of the Project would result in GHG emissions predominantly associated with motor vehicle use (i.e. trucks and personal vehicles). Due to the reduction in the amount of traffic associated with Reduced Project Alternative, mobile source GHG emissions would decrease slightly as compared to the proposed Project. Additionally, because the Reduced Density Alternative would involve less building area than the Project, fossil fuel use for building operation would also be slightly reduced under this Alternative. However, even with implementation of CARB and SCAQMD recommendations contained in mitigation measure **GHG-1**, heavy-duty truck travel would result in the SCAQMD industrial land use significance threshold to be exceeded. Therefore, this Alternative would reduce the severity of Project's cumulatively considerable GHG emissions impact, but not likely to below a level of significance.

Hazards and Hazardous Materials

The Project site is listed in multiple environmental hazards databases as searched by Environmental Data Resources, Inc. (EDR) as part of the ESA. In each case, no substantive information was provided that would indicate a significant environmental threat or concern to the proposed Project site. Like the proposed Project, it is possible that hazardous materials could be used during the course of daily operations, although the amount of hazardous materials would be slightly lower under this Alternative. Nevertheless, implementation of Mitigation Measure **HAZ-1** would reduce hazardous impacts to a less than significant level.

As with the proposed Project, Alternative 2 would have no impact on schools or airports. During the City of Irwindale's required review of the Proposed Project's applications, the Project's design would be reviewed to ensure that adequate access to and from the site and around the proposed buildings is provided for emergency vehicles. Overall, impacts to hazards and hazardous materials would be similar to those of the proposed Project alternative.

Hydrology and Water Quality

The Reduced Project Alternative would have the same ground-disturbing physical impacts as the proposed Project, attract the same types of building occupants, and have a near-identical drainage system design. Impervious surface coverage also would be approximately the same because the 15% reduction in building coverage would be offset by increased vehicle parking areas. This Alternative would have the

same drainage system design as the proposed Project, therefore Alternative 2's surface water runoff impacts would be the same as the proposed Project.

Similar to the Proposed Project, implementation of this Alternative would require preparation of a Storm Water Pollution Prevention Plan (SWPPP) to address construction-related water quality issues, as well as compliance with a site-specific Water Quality Management Plan (WQMP) and its associated BMPs. Therefore, implementation of this Alternative would result in less than significant impacts with preparation of a SWPPP and compliance with a site-specific WQMP and its associated BMPs. The Reduced Project Alternative would result in similar hydrology and water quality impacts as the Project.

Land Use and Planning

Similar to the proposed Project, this Alternative would construct a warehouse building consistent with the site's current M-2 Heavy Manufacturing zoning designation. The Alternative would not divide and established community, nor would it conflict with any land use plan, policy, or regulation. However, this Alternative would provide a slightly less intensive use of the property, therefore it would not foster the same economic growth as the proposed Project. As such, selection of this Alternative would not fully meet the Project's economic, land use and employment objectives.

Mineral Resources

The Project is not located on land associated with a past, current, or anticipated mining location. As with the proposed Project, this Alternative would not include any mining activities. Impacts to mineral resources would be identical to the proposed Project.

Noise

As with the proposed Project, noise associated with this Alternative would occur during near-term construction activities and under long-term operation. Construction activities on the Project site may produce groundborne vibration or groundborne noise levels during earthwork/grading and the operation of heavy machinery. The Reduced Density Alternative would have similar ground-disturbing physical impacts as the proposed Project, though the building square footage would be reduced. Therefore, noise associated with short-term construction would be slightly less than the proposed Project. Long-term operation of this Alternative is not anticipated to result in perceptible levels of groundborne vibration or noise. Therefore, impacts to noise would be slightly lower than the proposed Project.

Population and Housing

The Reduced Density Alternative would likely generate fewer jobs than the proposed Project. Like the proposed Project, this Alternative would not result in growth that was not already anticipated by the City of Irwindale General Plan. Additionally, this Alternative would not displace existing housing and would not require additional housing construction. As such, impacts to population and housing would be less than significant and similar to the proposed Project.

Public Services

A smaller building and scaled-down operational scenario would place reduced, but similar demands on existing public facilities and service systems as compared to the proposed Project. This Alternative is not expected to generate significant demands for additional fire and police protection, l schools, parks, or other public facilities. The Alternative would implement a traffic control plan and would not impact emergency response times. Impacts to this threshold would be less than significant and similar to those of the proposed Project.

Recreation

No impact existing neighborhood parks would occur due to implementation of this Alternative. The Alternative would not increase local or regional population that would result in any increase in demand for neighborhood or regional parks. Impacts would be similar to the proposed Project.

Transportation

A 15% reduction in building area would slightly reduce traffic impacts when compared to the proposed Project. A smaller warehouse would involve fewer employees, thereby leading to a decrease in the number of trips to and from the project site. The Reduced Intensity Alternative would result in a net Project total of 2,717 daily trips, as compared with the proposed Project total of 3,210 (Appendix J).

Despite the reduction in daily traffic trips that would occur with selection of this Alternative, this Alternative is not expected to avoid any of the Project's direct or cumulatively considerable and unavoidable impacts to study area intersections or roadway segments. As with the proposed Project, implementation of Mitigation Measures **TRANS-1** through **TRANS-4**, the Project's fair share contributions through a combination of payment of DIF fees, physical construction of improvements, and/or fair share monetary contribution would reduce the Alternative's contribution to cumulative-level impacts to a less than significant level. Overall, the Alternative's reduction in building square footage would proportionally reduce traffic impacts, but not below a significant level. Impacts would be similar but slightly less than the proposed Project.

Tribal Cultural Resources

The project site's proximity to the San Gabriel River and associated traditional Native American trade routes makes it sensitive for tribal cultural resources and the potential for discovery of buried cultural resources in native soils at the site. It is possible that grading and development could result in the discovery of cultural resources. As with the proposed Project, the implementation of Mitigation Measures **CUL-1** and **CUL-2** would include an opportunity for tribal participation in monitoring of subsurface excavations. Impacts would be less than significant, as with the proposed Project.

Utilities and Service Systems

This Alternative would result in an overall decrease in the building size relative to the proposed Project. Alternative 2 would install connections to existing utility lines, including gas, water, and sewer, off Los Angeles Boulevard. As such, water use, wastewater generation, and solid waste generation would be slightly less when compared to the proposed Project. Stormwater discharges and runoff volumes are

anticipated to be relatively similar to those of the proposed project, since the project site would be generally impervious and similar project site runoff retention and treatment standards would be required. Overall, impacts would be slightly reduced relative to the less than significant impacts of the proposed Project.

Wildfire

As with the proposed Project, this Alternative is not located within or near a very high fire hazard severity zone. The project site is located within a heavily industrialized area and is not in the immediate vicinity of any natural or wildlife areas. Access to the site is planned at multiple driveway locations on Los Angeles Street and at Rivergrade Road, thereby facilitating emergency response and evacuation, if necessary. No impact to wildfire would occur, which is the same as the proposed Project.

5.4.3 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) indicates that an analysis of alternatives to a project shall identify an Environmentally Superior Alternative among the alternatives evaluated in an EIR. The CEQA Guidelines also state that should it be determined that the No Project Alternative is the Environmentally Superior Alternative, the EIR shall identify another Environmentally Superior Alternative among the remaining alternatives.

A comparative summary of the environmental impacts associated with each alternative is provided in Table 5-1. As shown, Alternative 1, the No Project (No Project/No Build) Alternative, would be the environmentally superior alternative, as it would result in no new environmental impacts, would avoid several of the proposed project's impacts and would eliminate the significant and unavoidable impacts identified for the proposed project related to air quality, GHGs, and traffic. However, Alternative 1 would not feasibly attain the basic objectives of the Project.

Alternative 2, Reduced Intensity Project (450,000 SF) is, therefore, an environmentally superior alternative to the proposed Project. This alternative would reduce several of the proposed project's traffic and air quality impacts, though not to less than significant levels. This alternative would meet the basic project objectives, although to a lesser degree when compared with the proposed Project.

Table 5-1. Comparison of Impacts

Impact Area	Proposed Project	Alternative 1	Alternative 2
Air Quality	Significant and unavoidable	Impacts avoided	Impacts reduced but would remain significant and unavoidable
Cultural Resources	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts
Energy	Less than significant	Impacts avoided	Similar impacts
Greenhouse Gas Emissions	Significant and unavoidable	Impacts avoided	Impacts reduced but would remain significant and unavoidable
Hazards & Hazardous Materials	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts
Hydrology & Water Quality	Less than significant	Impacts avoided	Similar impacts
Land Use & Planning	Less than significant	Slightly greater impacts	Similar impacts
Noise	Less than significant	Impacts avoided	Impacts reduced
Transportation	Significant and unavoidable	Impacts avoided	Impacts reduced but would remain significant and unavoidable
Utilities & Service Systems	Less than significant	Impacts avoided	Similar impacts
Tribal Cultural Resources	Less than significant with incorporation of mitigation measures	Impacts avoided	Similar impacts
Meets Most of Project Objectives?	Yes	No	Yes

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6.0 PREPARERS

6.1 ECORP Consulting, Inc.

Tom Holm, Senior Environmental Planner/Project Manager

Lindsay Liegler, Assistant Environmental Planner

Seth Myers, Senior Air Quality/Noise Scientist

Rosemary Worden, Assistant Environmental Planner

Laura Hesse, Technical Editor

Karla Green, Technical Editor

6.2 KOA Corporation

Brian Marchetti, Vice President/Senior Planner

Joel Falter, Principal Transportation Planner

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8.0 APPENDICES

Appendix A – Notice of Preparation, Initial Study and Correspondence

Appendix B – Air Quality and Greenhouse Gas Assessment

Appendix C – Health Risk Assessment

Appendix D – Historic Resources Inventory

Appendix E – Phase 1 Environmental Site Assessment

Appendix F – Geotechnical Analysis

Appendix G – Low Impact Development Report

Appendix H – Preliminary Hydrological Calculations

Appendix I – Noise Assessment

Appendix J – Traffic Impact Study

APPENDIX A

Notice of Preparation, Initial Study and Correspondence

INITIAL STUDY

13131 LOS ANGELES STREET INDUSTRIAL PROJECT

August 2019

Lead Agency:

City of Irwindale
5050 North Irwindale Avenue
Irwindale, California 91706

Prepared by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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INITIAL STUDY
13131 LOS ANGELES STREET INDUSTRIAL PROJECT

Lead Agency: City of Irwindale (City)

Project Proponent: Duke Realty

Project Location: 13131 Los Angeles Street, Irwindale, California
Adjacent to the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, the San Gabriel River Freeway (I-605) to the north, an industrial building to the west, and a quarry to the south.

Project Description:

The Project involves the demolition of the existing on-site buildings and structures for the construction of a stand-alone concrete tilt-up building (±528,710 square feet) located at 13131 Los Angeles Street (APN: 8353-020-007). The 24.88-acre property is currently occupied with multiple buildings. The land is zoned M-2 (Heavy Manufacturing), designated "Industrial/Business Park" by the City's General Plan, and subject to the Irwindale Commercial & Industrial Design Guidelines. The Project Proponent is pursuing the Project on a speculative basis, meaning that the proposed building's future tenants are not yet identified. The Project will require the following approval from the City:

> Site Plan and Design Review Permit (DA) to address the site configuration, design, location, and impact of the proposed use and the compliance of the Project with the established Zoning Code standards and the "City of Irwindale Commercial and Industrial Design Guidelines."

Public Review Period: **August 15, 2019 to September 13, 2019**

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ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
APE	Area of Potential Effect
AQMP	Air Quality Management Plan
BMPs	Best Management Practices
CalEEMod	California Emissions Estimator Model
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CH_4	Methane
City	City of Irwindale
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CO Plan	Federal Attainment Plan for Carbon Monoxide
CRHR	California Register of Historic Places
CWA	California Water Act
DOC	California Department of Conservation
DTSC	Department of Toxic Substances Control
EIC	Eastern Information Center
EIR	Environmental Impact Report

ACRONYMS AND ABBREVIATIONS

EPA	Environmental Protection Agency
FEIR	Final Environmental Impact Report
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
General Plan	City of Irwindale General Plan (2008)
GHGs	Greenhouse Gases
LSTs	Localized Significance Thresholds
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
MMT	Million Metric Tons
MND	Mitigated Negative Declaration
MSHCP	Multiple Species Habitat Conservation Plan
msl	Mean sea level
$MTCO_2eq$	Metric Tons of Carbon Dioxide Equivalent
NAHC	Native American Heritage Commission
ND	Negative Declaration
NPDES	National Pollutant Discharge Elimination System
N_2O	Nitrous Oxide
NO_x	Nitrogen Oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OHV	Off-Highway Vehicle
OPR	California Office of Planning and Research
PM_{10} and $PM_{2.5}$	Particulate Matter
Q Zones	Quarry zones
RCPG	Regional Comprehensive Plan and Guide
RCRA	Resource Conservation and Recovery Act
ROG	Reactive Organic Gases
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
USACE	United States Army Corps of Engineers
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCS	Sustainable Communities Strategy
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act
SP	Service Population
SoCAB	South Coast Air Basin
SR	State Route
SRA	Sensitive Receptor Area

ACRONYMS AND ABBREVIATIONS

SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
USFWS	U.S. Fish and Wildlife Service

SECTION 1.0 BACKGROUND

1.1 Summary

Project Title:	13131 Los Angeles Street Industrial Project
Lead Agency Name and Address:	City of Irwindale, 5050 North Irwindale Avenue Irwindale, CA 91706
Contact Person and Phone Number:	Marilyn Simpson, Community Development Manager (626) 430-2209
Project Location:	13131 Los Angeles Street The Project is located east of the San Gabriel River and Interstate 605 in the western portion of the City of Irwindale (Figure 1. Regional Location).
General Plan Designation:	Industrial/Business Park
Zoning:	M-2 (Heavy Manufacturing)

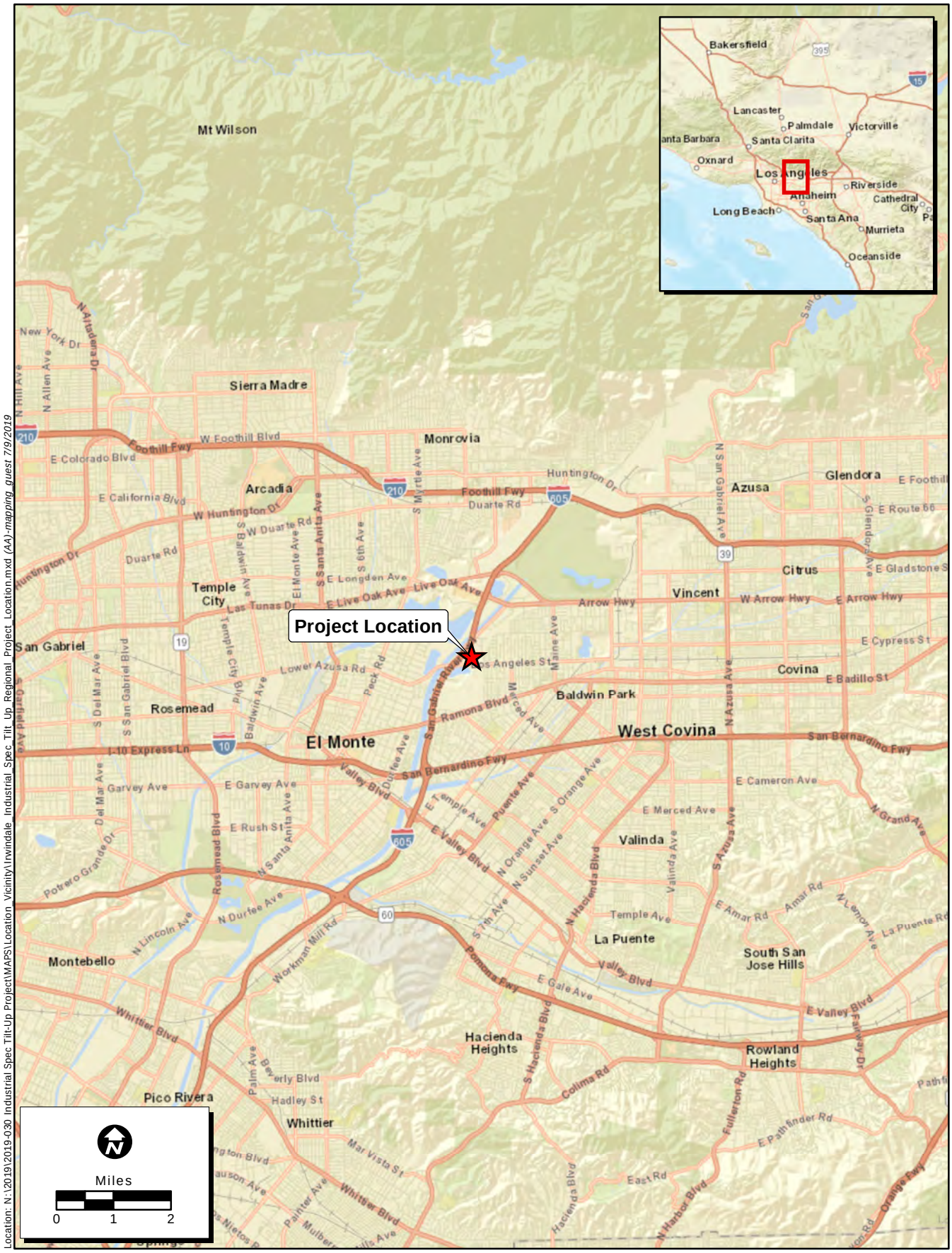
1.2 Introduction

The City of Irwindale is the Lead Agency for this Initial Study. The Initial Study has been prepared to identify and assess the anticipated environmental impacts of the 13131 Los Angeles Street Industrial Project. This document has been prepared to satisfy the California Environmental Quality Act (CEQA) (Pub. Res. Code, Section 21000 *et seq.*) and State CEQA Guidelines (14 CCR 15000 *et seq.*). CEQA requires that all state and local government agencies consider the environmental consequences of Projects over which they have discretionary authority before acting on those Projects. A CEQA Initial Study is generally used to determine which CEQA document is appropriate for a Project (Negative Declaration [ND], Mitigated Negative Declaration [MND], or Environmental Impact Report [EIR]).

1.3 Surrounding Land Uses/Environmental Setting

Surrounding the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south (Figure 2. Project Location).

Until recently, the approximate 24.9-acre Proposed Project site has been the location of a former hollow core concrete manufacturing business. The site has largely been cleared of facilities associated with this former use, with the exception of two small buildings (an office and weld shop), vehicle bay, three trailers, gravel bins, a batch plant, concrete basting beds, and several plywood sheds. The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage.



Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Location_Vicinity\Irwindale_Industrial_Spec_Tilt_Up_Regional_Project_Location.mxd (AA)-mapping_guest 7/9/2019

Map Date: 7/9/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

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Figure 1. Regional Project Location

2019-030 Irwindale Industrial Spec Tilt-Up Project

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Map Date: 7/9/2019
Base Source: NAIP 2018

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Figure 2. Project Location

2019-030 Irwindale Industrial Spec Tilt-Up Project

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SECTION 2.0 PROJECT DESCRIPTION

2.1 Project Background

The Project site was previously occupied by a pre-cast concrete manufacturing and distribution business from 1967 until 2017. This use took advantage of nearby sand and gravel quarries for source material and convenient access to the San Gabriel Freeway (I-605) for heavy duty truck trips.

The current Project proponent, Duke Realty, approached the City in 2018 with plans for a ±528,710 square foot speculative concrete tilt-up building on the site.

2.2 Project Objectives

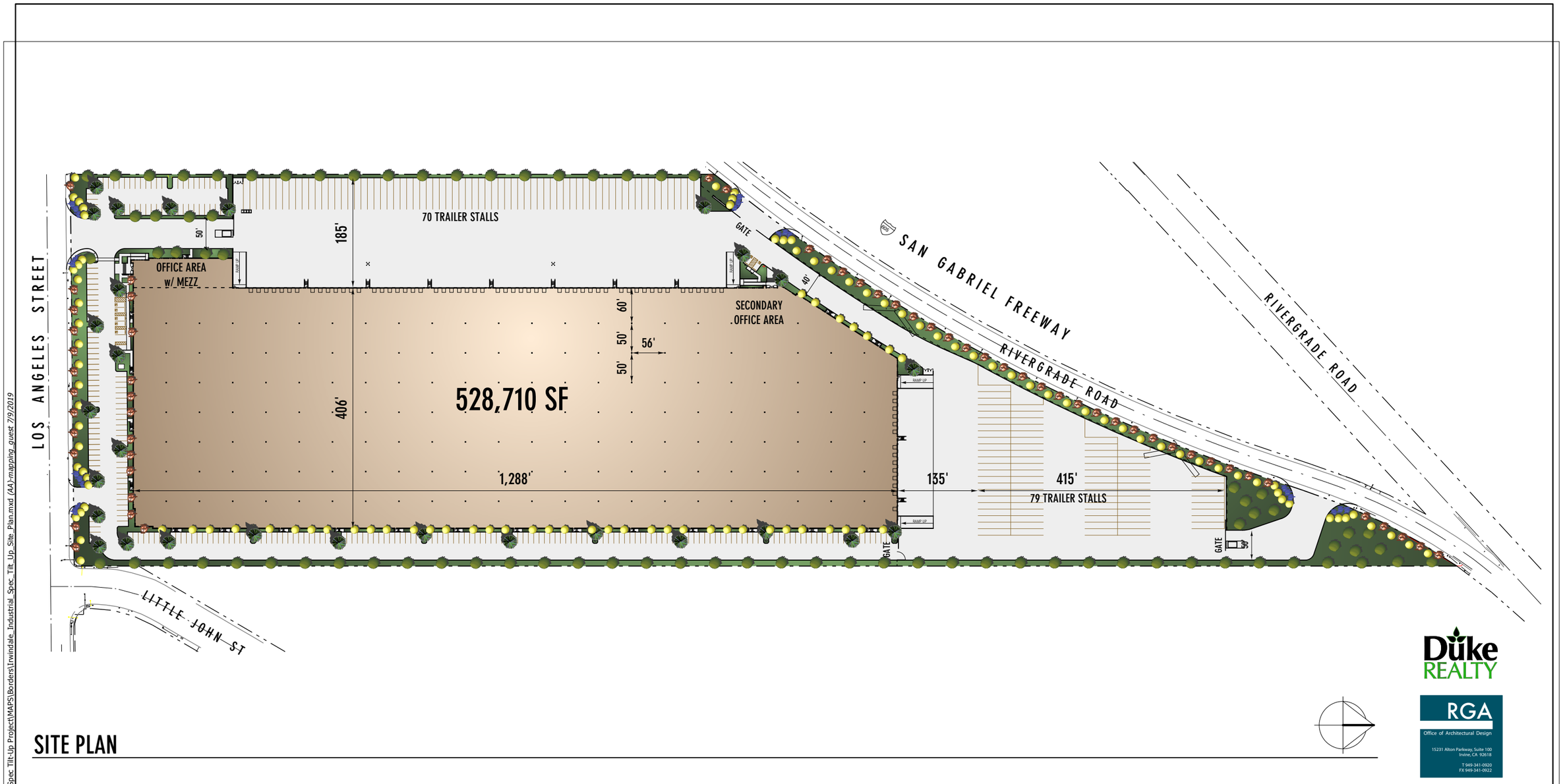
- To locate an industrial/warehouse building on a site that is accessible to regional markets and consistent with the existing General Plan and zoning.
- To develop an industrial/warehouse project that is compatible with surrounding uses and conforms with established City Commercial and Industrial Design Guidelines.

2.3 Project Characteristics

The Proposed Project involves the demolition of the existing on-site buildings (two small office buildings) and structures for the construction of a ±528,710 square feet stand-alone concrete tilt-up building located at 13131 Los Angeles Street (APN: 8353-020-007) (Figure 3. Site Plan). The proposed building would be 47.5 feet tall, with architectural features extending up to 53.5 feet tall. The building would feature forklift ramps and roll-up dock doors on the northern and western sides, respectively (Figure 4. Building Elevations). The Proposed Project will include 80 trailer parking spaces on the southeast corner of the site, 70 trailer parking spaces along the western end of the site, and 261 standard vehicle parking spaces around the perimeter of the building. Landscaping and a fire lane will be installed around the perimeter of the building. The Project Proponent is pursuing the Project on a speculative basis, meaning that the proposed building's future tenants are not yet identified.

2.4 Project Timing

The Proposed Project is anticipated to be built in a single phase, with initial demolition, grading and construction scheduled to commence in spring of 2020 if approved.



SITE PLAN

Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Borders\Irwindale_Industrial_Spec_Tilt_Up_Site_Plan.mxd (AA)-mapping_quest_7/9/2019

Map Date: 7/9/2019
Source: RGA

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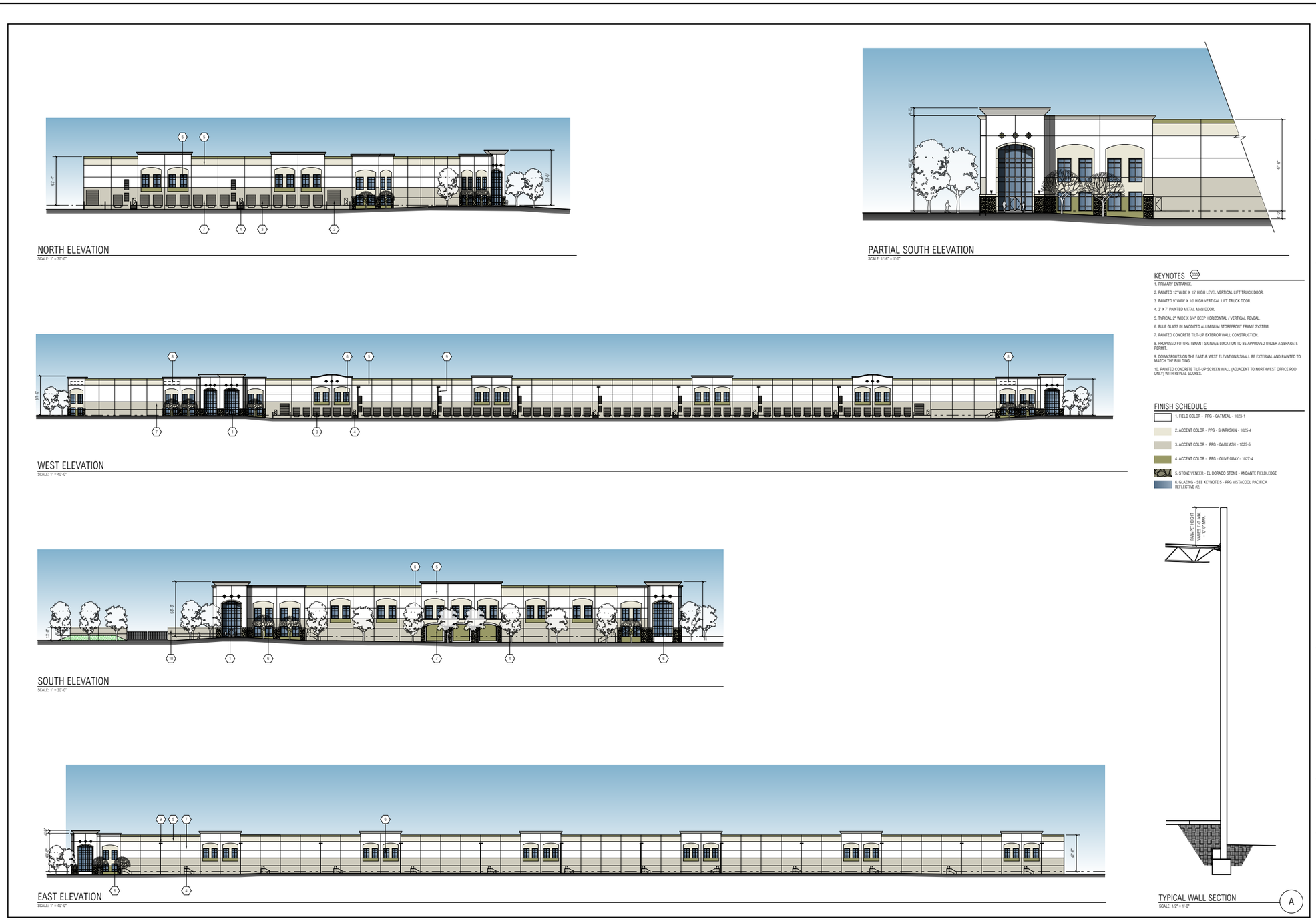
Figure 3. Site Plan

2019-030 Irwindale Industrial Spec Tilt-Up Project



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Map Date: 7/9/2019
Source: RGA

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Figure 4. Building Elevations

2019-030 Irwindale Industrial Spec Tilt-Up Project

2.5 Regulatory Requirements, Permits, and Approvals

The following approvals and regulatory permits would be required for implementation of the Proposed Project:

- Site Plan and Design Review Permit (DA)
- Grading and Building permits

2.6 Consultation With California Native American Tribe(s)

The following California Native American tribes traditionally and culturally affiliated with the Proposed Project area have been notified of the Proposed Project: Gabrielino Band of Mission Indians – Kizh Nation; Gabrielino/Tongva San Gabriel Band of Mission Indians; Gabrielino Tongva Indians of California Tribal Council; Gabrielino/Tongva Nation.

The Gabrielino Band of Mission Indians – Kizh Nation requested consultation pursuant to Public Resources Code section 21080.3.1. A summary of the status of the consultation process is provided in Section 4.18 of this Initial Study.

SECTION 3.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED AND DETERMINATION

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☒ Greenhouse Gas Emissions	☐ Public Services
☐ Agriculture and Forestry Resources	☒ Hazards/Hazardous Materials	☐ Recreation
☒ Air Quality	☒ Hydrology/Water Quality	☒ Transportation
☐ Biological Resources	☐ Land Use and Planning	☒ Tribal Cultural Resources
☒ Cultural Resources	☐ Mineral Resources	☒ Utilities and Service Systems
☒ Energy	☒ Noise	☐ Wildfire
☐ Geology and Soils	☐ Population and Housing	☐ Mandatory Findings of Significance

Determination

On the basis of this initial evaluation:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☐
I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☒
I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project, nothing further is required.	☐

Marilyn Simpson — 8/7/19

Marilyn Simpson
Community Development Manager

Date

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SECTION 4.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

4.1 Aesthetics

4.1.1 Environmental Setting

Regional Setting

State Scenic Highways

The California Scenic Highway Program protects and enhances the scenic beauty of California's highways and adjacent corridors. A highway can be designated as scenic based on how much natural beauty can be seen by users of the highway, the quality of the scenic landscape, and if development impacts the enjoyment of the view (Caltrans 2011). Two State Scenic highways are located within Los Angeles County: State Route (SR) 2 and SR 110. SR2, the closest scenic highway to the Proposed Project site, is located over 11 miles north of the Proposed Project site.

Visual Character of the Project Site

The Proposed Project site was formerly occupied by a pre-cast concrete manufacturing business. The site has largely been cleared of facilities associated with this former use, with the exception of two small office buildings and parking areas along Los Angeles Street, a central concrete batch plant, remnant central conveyor line and loading apparatus. The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage.

4.1.2 Aesthetics (I) Environmental Checklist and Discussion

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒

The City of Irwindale General Plan (2008) (General Plan) does not address scenic vistas. The Proposed Project site is located within a heavy industrial area and is surrounded by commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a quarry (Vulcan Durbin Plant) to the south. The Proposed Project is not within the vicinity of a scenic vista; therefore, no impact would occur.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

Caltrans (Caltrans, 2011) identifies two state scenic highways within Los Angeles County: SR 2 and SR 110. SR 2, the closest of the two scenic highways, is located more than 11 miles north of the Proposed Project site. As such, no impact would occur and no further analysis of this subject is required.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒

The Proposed Project is located within an urbanized area zoned M2 – Heavy Manufacturing. The Proposed Project site was previously utilized as a pre-cast concrete manufacturing business for multiple decades. The site has largely been cleared of facilities associated with this former use, with the exception of two small office buildings and parking areas along Los Angeles Street, a central concrete batch plant, remnant central conveyor line and loading apparatus. The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage. There are no public views or scenic vistas within the vicinity of the Proposed Project site. As such, no impact would occur and no further analysis of this subject is required.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

The Proposed Project site currently consists of a mostly vacant lot with two small buildings (an office and weld shop), vehicle bay, three trailers, gravel bins, a batch plant, concrete basting beds, and several plywood sheds. The Proposed Project would consist of the construction of a ±528,710 square foot tilt-up building in a heavily developed area zoned for heavy manufacturing. Although the construction of a new building may reintroduce light sources onto this site, a light plan will be submitted to the City and the

building design will fully comply with the City of Irwindale Commercial and Industrial Design Guidelines. A less than significant impact would occur. No further analysis of this subject is required.

4.2 Agriculture and Forestry Resources

4.2.1 Environmental Setting

The California Department of Conservation (DOC) provides online mapping of important agricultural and forestry resources, including Prime Farmland, Unique Farmland, Farmland of Statewide Importance, properties zoned for agriculture or forestry uses, and properties under Williamson Act contract. The Proposed Project site and its surrounding areas are entirely developed and not used for agricultural or forestry uses and are therefore not mapped as such (DOC 2016).

4.2.2 Agriculture and Forestry Resources (II) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

The Proposed Project site is zoned as M-2 Heavy Manufacturing by the City and is designated in the General Plan as Industrial/Business Park. Until recently, the approximate 24.9-acre Project site has been the location of a former pre-cast concrete manufacturing business. The Proposed Project site is not currently used as farmland or agricultural land, nor is it mapped as such (DOC 2016). Therefore, no impact would occur and no further analysis of this subject is required.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

The Proposed Project site is zoned as M-2 Heavy Manufacturing by the City and is designated in the General Plan as Industrial/Business Park. It is not zoned for agricultural use, nor is it under a Williamson Act contract. No impact would occur and no further analysis is required.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

The Proposed Project site is zoned as M-2 Heavy Manufacturing by the City and is designated in the General Plan as Industrial/Business Park. No forest land, timberland, or timberland zoned Timberland Production exists on or near the Proposed Project site. No impact would occur, and no further analysis is required.

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

The Proposed Project site is zoned as M-2 Heavy Manufacturing by the City and is designated in the General Plan as Industrial/Business Park. Forest land is not present on or near the Proposed Project site. No impact would occur and no further analysis is required.

Would the project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

The Proposed Project site is zoned as M-2 Heavy Manufacturing by the City and is designated in the General Plan as Industrial/Business Park. Until recently, the approximate 24.9-acre Project site has been the location of a former pre-cast concrete manufacturing business. Farmland and forest land are absent from the site. No impact would occur.

4.3 Air Quality

4.3.1 Environmental Setting

The Project site is located within the City of Irwindale. The California Air Resource Board (CARB) has divided California into regional air basins according to topographic features. Los Angeles County and the Project site are located in a region identified as the South Coast Air Basin (SoCAB). The SoCAB occupies the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. The air basin is on a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean on the southwest, with high mountains forming the remainder of the perimeter. The mountain ranges to the east affect the diffusion of pollutants by inhibiting the eastward transport of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions.

Both the U.S. Environmental Protection Agency (EPA) and the CARB have established ambient air quality standards for common pollutants. These ambient air quality standards are levels of contaminants representing safe levels that avoid specific adverse health effects associated with each pollutant. The ambient air quality standards cover what are called "criteria" pollutants because the health and other effects of each pollutant are described in criteria documents. The six criteria pollutants are ozone (O_3) (precursor emissions include nitrogen oxide [NOx] and reactive organic gases [ROG], carbon monoxide (CO), particulate matter (PM), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and lead. Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as nonattainment areas.

4.3.2 Air Quality (III) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☒	☐	☐	☐

Air quality within the South Coast Air Basin (SoCAB) is regulated by the South Coast Air Quality Management District (SCAQMD). Standards for air quality are documented in the SCAQMD's Air Quality Management Plan (AQMP) adopted in 2016. The Proposed Project would result in the emission of pollutants into the Air Basin during short-term construction and long-term operational activities. The pollutant levels emitted by the Project's construction and operation have the potential to exceed the daily significance thresholds established by the SCAQMD, thereby potentially conflicting with or obstructing implementation of the SCAQMD's 2016 Air Quality Management Plan. As such, an air quality technical report will be prepared and the required EIR shall evaluate the Proposed Project's potential to conflict with the adopted SCAQMD's Air Quality Management Plan.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☒	☐	☐	☐

The South Coast Air Basin is a non-attainment area for the federal ozone (O_3) and particulate matter ($PM_{2.5}$) standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$.Development of the Project site as proposed by the Project could cumulatively contribute to a net increase of criteria pollutants in the region. Therefore, the required EIR shall address the Project's potential to result in cumulatively considerable increase of pollutants for which the South Coast Air Basin is in non-attainment.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	☒	☐	☐	☐

The Project does not propose any sensitive receptors or land uses that may be considered point source emission sources. However, the Project has the potential to expose sensitive receptors in the vicinity to diesel particulate matter emissions from mobile sources associated with the Project (i.e. diesel-fueled vehicles and equipment). Diesel particulate matter dissipates greatly beyond approximately 1,000 feet from the source, but there are sensitive receptors (e.g. single-family homes) located within 1,000 feet of the Project site and along Los Angeles Street east of the Project site. Therefore, a diesel health risk assessment shall be prepared that evaluates impacts to maximum exposed sensitive receivers in the vicinity of the Project and its primary truck route. The health risk assessment also shall evaluate the Proposed Project's potential to contribute or cause localized exceedances of the federal and/or state ambient air quality standards. This information shall be included in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

The Project could produce odors during proposed construction activities resulting from construction equipment exhaust, and applications of asphalt or architectural coatings. However, standard construction practices would minimize the odor emissions and their associated impacts. Furthermore, any odors

emitted during construction would be temporary, short-term, and intermittent, and would cease with the completion of the respective phase of construction. In addition, construction activities on the Project site would be required to comply with SCAQMD Rule 402, which prohibits the discharge of odorous emissions that would create a public nuisance. As such, the Proposed Project would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

During long-term operation, the Proposed Project site would contain a light industrial building, the operating characteristics of which are not typically associated with objectionable odors. The temporary storage of refuse associated with the Proposed Project's long-term operational use could be a potential source of odor; however, Project-generated refuse is required to be stored in covered containers and removed at regular intervals in compliance with the City's solid waste practices, thereby precluding any significant odor impact. The Project would be required to comply with SCAQMD Rule 402 which prohibits the discharge of odorous emissions that would create a public nuisance, during long-term operation. As such, long-term operation of the Proposed Project would not create objectionable odors affecting a substantial number of people. Nevertheless, this subject will be analyzed in the required EIR.

4.4 Biological Resources

4.4.1 Environmental Setting

The Resource Management Element of the City General Plan (2008) meets state requirements for an open space element and a conservation element. The Resource Management Element focuses on remaining natural resources in the City that must be considered in future planning and development. The biological resources (flora and fauna) outlined within this section include alluvial scrub vegetation, eleven species of birds, the coast horned lizard (*Phrynosoma coronatum blainvillii*), and three species of rare plants. Due to the highly developed nature of the Proposed Project site and its surrounding areas, none of these flora and fauna are anticipated to occur on the Proposed Project site.

Soils

According to the Web Soil Survey (USDA 2019), soils on the Proposed Project site are mapped as Urban land, commercial-Soboba complex, 0 to 5 percent slopes. The parent material of this soil type is human-transported material derived from granite. These soils are not native and are typical of developed urban areas.

Vegetation Communities

The native vegetation found locally is characterized by the alluvial plain and is referred to as "alluvial scrub". This type of vegetation grows on sandy, rocky alluvium deposits by streams and includes a unique mix of sage scrub and desert species. It dominates a major outwash fan at the mouths of canyons along the coastal side of the San Gabriel and San Bernardino mountains. This vegetation community does not occur on the Proposed Project site.

Special-Status Wildlife

The following sensitive wildlife species are listed in the City General Plan as currently known to inhabit the City, or to have inhabited the City in the past:

- **Northern harrier** (*Circus cyaneus*) is a California Department of Fish and Wildlife (CDFW) Species of Special Concern, Second Priority and is listed by California Natural Diversity Data Base (CNDDB) as uncommon and regionally threatened. It may occasionally forage in the winter months, but no suitable breeding habitat is present in the City planning area. The Proposed Project site is not considered suitable habitat for this species.
- **Sharp-shinned hawk** *(Accipiter striatus*) is a priority CDFW Species of Special Concern. Birds in this priority are defined as not in immediate danger of regional extirpation, and populations within most of their range do not appear to be declining seriously; however, by virtue of their small populations in the State, the species are vulnerable to extirpation should a serious threat materialize. This bird is most commonly found in mixed woodlands, which do not exist on the Proposed Project site. The Proposed Project site is not considered suitable habitat for this species.
- **Osprey** (*Pandion haliaetus*) is a priority CDFW Species of Special Concern, indicating that populations of this species are on the decline throughout much of its range, but that regional populations are still sufficiently large that danger of widespread extirpation is not immediate. The osprey has been observed in the City. Ospreys tend to hunt and nest in close proximity to bodies of water, which does not apply to the Proposed Project site. The Proposed Project site is not considered suitable habitat for this species.
- **Cooper's hawk** (*Accipiter cooperii*) is also a priority CDFW Species of Special Concern. No suitable nesting habitat for the Cooper's hawk exists in the City though it has been observed foraging. Cooper's hawks prefer mature forests, open woodlands, wood edges, and river groves. The Proposed Project site is not considered suitable habitat for this species.
- **Prairie falcon** (*Falco mexicanus*) is also a priority CDFW Species of Special Concern. It nests on rocky cliffs or outcroppings adjacent to open, arid valleys used for foraging. This species is rarely seen on the southern slopes of the San Gabriel Mountains. The Proposed Project site is not considered suitable habitat for this species.
- **Burrowing owl** (*Athene cunicularia*) is also a priority CDFW Species of Special Concern. It breeds and forages in open grasslands and agricultural fields with earthen drainage embankments. The Proposed Project site is not considered suitable habitat for this species.
- **California black-tailed gnatcatcher** (*Polioptila melanura californica*) is listed by U.S. Fish and Wildlife Service (USFWS) as a candidate species because of continuing and increasing pressures on its habitat from development. In addition, CDFW lists the gnatcatcher as a species of special concern in the second priority category, indicating a distinct population decline throughout its range in California. This species is commonly found in dense thorn scrub and thickets of the Desert Southwest. The Proposed Project site is not considered suitable habitat for this species.

- **Yellow warbler** (*Dendroica petechia*) is a CDFW Bird of Special Concern. They are considered widely distributed and may pass through urban and developed areas such as the City, their preferred and most common habitat is streamside riparian thickets. The Proposed Project site is not considered suitable habitat for this species.
- **Yellow breasted chat** (*Icteria virens*) is a CDFW Bird of Special Concern. Similar to the yellow warbler, they may pass through urban and developed areas such as the City, although their preferred and most common habitat consists of brushy tangles, briars, and stream thickets. They tend to nest in very dense scrub. The Proposed Project site is not considered suitable habitat for this species.
- **Yellow-billed cuckoo** (*Coccyzus americanus occidentalis*) is an FWS Category 2 candidate species for federal listing. They tend to inhabit and nest in woodlands, thickets, orchards, streamside groves. In the western U.S., they prefer streamside trees, including cottonwood-willow groves. The Proposed Project site is not considered suitable habitat for this species.
- **Willow flycatcher** (*Empidonax traillii*) is also an FWS Category 2 candidate species for federal listing. They typically nest in thickets of deciduous trees and shrubs, especially willows, or along woodland edges, often near streams or marshes. The Proposed Project site is not considered suitable habitat for this species.
- **Coast horned lizard** (*Phrynosoma coronatum blainvillii*) is listed by FWS as a candidate species. It is found in open spaces within scrub communities such as coastal sage scrub, but its habitat is declining due to development and flood control projects. The Proposed Project site is not considered suitable habitat for this species.

Special-Status Plants

The following sensitive plant species are listed in the City General Plan as currently known to be present within the City, or to have been observed in the City in the past:

- **Braunton's milk-vetch** (*Astragalus brauntonii*) is a perennial plant listed as a sensitive species by the FWS. The habitat of this species is limited to the foothills of the Los Angeles Basin. The preferred habitat of this species is brushy areas such as chaparral. The Proposed Project site is not considered suitable habitat for this species.
- **Slender-horned spine flower** (*Centrostegia leptoceras*) is listed by FWS as an endangered species. It is also listed as endangered by CDFW as rare and endangered by the California Native Plant Society (CNPS). This small, prostrate annual occurs in sandy openings of undisturbed soils. Due to the disturbed nature of onsite soils, the Proposed Project site is not considered suitable habitat for this species.
- **San Gabriel Mountain Dudleya** (*Dudleya densiflora*) is listed as a sensitive species by the FWS. This species has a limited range and is usually found on rocky cliffs in canyons at the southern base of the San Gabriel Mountains, a habitat that does not occur within the City planning area and the Proposed Project site is not considered suitable habitat for this species.

Wildlife Movement Corridors

The Proposed Project site has been surrounded by a chain link fence and used as a pre-cast concrete manufacturing business for multiple decades. The site has been highly disturbed through decades of industrial manufacturing and heavy truck usage. Additionally, it is surrounded by development in each direction. The Proposed Project site is therefore not considered part of a wildlife movement corridor.

4.4.2 Biological Resources (IV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

The Project site is highly disturbed having been subject to decades of heavy truck use and manufacturing activity associate with the prior pre-cast concrete manufacturing operation. The site is vegetatively barren with the exception of two trees in the north-central portion of the Project site and several trees on the southern boundary. Although sensitive species listed in the City General Plan are known to inhabit the City, Due to the developed and highly disturbed nature of the Project site, there is no significant likelihood of these plant or animal species, or their habitats, occurring on the site.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

The Proposed Project site has been graded and is mostly devoid of vegetation and would therefore be characterized as “developed”. Riparian habitats and other sensitive natural communities are absent from the Proposed Project site. No impact would occur and no further analysis of this subject is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

The Proposed Project site is located in a heavily developed area zoned for heavy manufacturing and has been used as a pre-cast manufacturing business for over 50 years. No wetlands or waters are located on the Proposed Project site. No impact would occur and no further analysis is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐

The Proposed Project site has been surrounded by a chain link fence and used as a pre-cast concrete manufacturing business for multiple decades. The site has been highly disturbed through decades of industrial manufacturing and heavy truck usage. Additionally, it is surrounded by development in each direction. Although the site is not considered part of a wildlife corridor, two isolated trees occur within the north central portion of the Proposed Project site, and several trees occur along the Proposed Project site frontage with Los Angeles Street. These trees provide possible nesting habitat for raptors in addition to passerine species. Although removal of these trees would not be considered a significant biological resource impact, all nesting migratory birds are protected under the federal Migratory Bird Treaty Act (MBTA). As such, to ensure that there would be no impacts to protected active nests, a City condition of approval will be established assuring compliance with the MBTA.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒

Included in the City's Resource Management Element of their General Plan are policies intended to continue the maintenance and conservation of the City's natural resources. The Proposed Project site is devoid of any significant biological resources. The Proposed Project does not conflict with any local

policies or ordinances to protect biological resources. No impact would occur. No further analysis is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The Proposed Project site is zoned M-2 Heavy Manufacturing and is designated in the General Plan as Industrial/Business Park. The site is currently developed and does not contain habitat for sensitive biological resources. The Proposed Project would not conflict with any habitat conservation plans. No impact would occur.

4.5 Cultural Resources

4.5.1 Environmental Setting

Cultural Resources

A Historic Resources Inventory was performed for the Proposed Project site by Dudek in May 2019 (Dudek 2019).,. The goal of this report was to determine if cultural resources were present in or adjacent to the Project area and assess the sensitivity of the Project area for undiscovered or buried cultural resources.

The study involved completion of a California Historical Resources Information System (CHRIS) records search, a pedestrian survey of the Proposed Project site, and evaluation of buildings and structures over 45 years of age located on the property for historical significance. The significance evaluation included conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context.

Dudek evaluated the Project site for historical significance and found that it does not appear eligible for inclusion in the National Register of Historic Places (NRHP), California Register of Historical Resource (CRHR), City of Los Angeles Historic-Cultural Monument (HCM), or local register (6Z) due to a lack of significant historical associations and integrity. The buildings and structures on the property are therefore not considered historical resources for the purposes of CEQA. As such, the Proposed Project would have no impact on historical built environment resources for the purposes of CEQA.

No archaeological resources were identified within the Proposed Project site as a result of the CHRIS records search. No specific archaeological resources or sensitivity concerns were identified by any sources consulted.

4.5.2 Cultural Resources (V) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☒	☐

As a result of the background research, field survey, and property significance evaluations, buildings at the Proposed Project site were evaluated and found not eligible for the NRHP, CRHR, or as a City of Los Angeles HCM, or local register, due to a lack of significant historical associations, architectural merit, and compromised integrity. Nevertheless, the potential for substantial adverse changes in the significance of a historical resource will be addressed in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☒	☐	☐	☐

No archaeological resources or sensitivity concerns were identified within the Project site as a result of the CHRIS records search and other records sources. However, it is possible that intact archaeological deposits are present at subsurface levels. The potential for unanticipated impacts to archaeological resources and human remains during construction activities will be addressed in the required EIR. Mitigation measures to reduce any significant impacts to less than significant levels will be identified.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

No human remains or dedicated cemeteries were identified during the background research, field survey, and property significance evaluation. Compliance with California Health and Safety Code Section 7050.5 governing the discovery, notification, disposition and treatment of discovered human remains and related grave goods will be adhered to during Project construction. Mitigation will be identified in the required EIR to assure compliance with Code provisions.

4.6 Energy

4.6.1 Environmental Setting

The Project site is currently a vacant, former pre-cast concrete manufacturing site with no significant energy demand or consumption.

4.6.2 Energy (VI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☒	☐	☐	☐

This impact analysis focuses on the four sources of energy that are relevant to the Proposed Project: electricity, natural gas, the equipment fuels necessary for Project construction, and the automotive fuel necessary for Project operations. Addressing energy impacts requires an agency to make a determination as to what constitutes a significant impact. There are no established thresholds of significance, statewide or locally, for what constitutes a wasteful, inefficient, and unnecessary consumption of energy for a proposed land use project. An energy analysis will be prepared for the Proposed Project and included in the required EIR to address the potential for wasteful, inefficient or unnecessary consumption of energy resources.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

The Proposed Project will be required to comply with California Energy Efficiency Standards for Nonresidential Buildings (Title 24) and the 2016 Building and Energy Efficiency Standards adopted by the Californian Energy Commission (CEC), which include new construction of nonresidential buildings. Under the 2016 Standards, nonresidential buildings are 5 percent more energy efficient than the 2013 Standards. Nonresidential buildings constructed in accordance with the 2013 Building Energy Efficiency Standards are 30 percent more energy efficient than the prior 2009 standards as a result of better windows, insulation, lighting, ventilation systems, and other features. The Proposed Project will also be required to comply with the latest California Green Building Standards (Title 24, California Code of Regulations) that establish planning and design standards for sustainable site development, energy efficiency (in excess of California Energy Code Requirements) and water conservation, among other environmental design factors. Regardless, an energy analysis will be prepared and included in the required EIR to address the potential

for the Proposed Project to conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

4.7 Geology and Soils

4.7.1 Environmental Setting

The soils generally found in the City consist of a surface layer of very coarse sand, gravel, cobbles, and boulders, derived by erosion from local mountains. These surficial soils are typically over five feet in depth, well drained, and have moderately rapid permeability. They generally exhibit slow runoff, with a slight erosion hazard. Throughout much of the City, the original surface soil has been disrupted and removed by gravel quarry operations or urbanization (City 2008).

A site-specific geotechnical investigation of the Proposed Project site was performed by Southern California Geotechnical (SCG) in November 2018. The report summarizing the conclusions and recommendations resulting from the investigation (SCG 2018) is referenced throughout this section.

Geomorphic Setting

The ground surface cover throughout most of the site generally consists of crushed aggregate base. Ground surface cover surrounding the buildings in the southern area of the site consists of asphaltic concrete pavements. The pavements are in poor condition with areas of moderate to severe cracking throughout. Portland cement concrete (PCC) casting beds and slabs are also present throughout the site. Topography ranges in elevations from 363± feet mean sea level (msl) in the northern area of the site to a minimum elevation of 343± feet msl in along the southern property line. The site topography appears to slope gently downward toward the south at a gradient of approximately 1± percent.

Regional Seismicity and Fault Zones

An "active fault," according to DOC, Division of Mines and Geology, is a fault that has indicated surface displacement within the last 11,000 years. A fault that has not shown geologic evidence of surface displacement in the last 11,000 years is considered "inactive."

Soils

As mentioned in Section 4.4 Biological Resources, Web Soil Survey (USDA 2019) maps the soils at the Proposed Project site as Urban land, commercial-Soboba complex, 0 to 5 percent slopes. As a part of the geotechnical investigation, subsurface exploration was conducted down to 50± feet below existing site grades at three (3) locations onsite. In addition, a total of fifteen (15) trenches were excavated at the site to depths of 5 to 10± feet below existing site grades and existing concrete slabs were cored in eight (8) different locations in order to determine the thickness of the existing slab section.

Findings differed slightly at each boring location. At one of the locations, asphaltic concrete pavements were present at the ground surface and extended for 2± inches with no discernable layer of aggregate base. Another location encountered a surficial layer of pea gravel at the ground surface approximately 1 inch thick, underlain by 6± inches of crushed aggregate base. The base materials encountered at most of

the boring and trench locations possess very high strengths and appear to consist of cement treated base. Native alluvial soils were encountered at the ground surface at one of the trench locations and beneath the pavement or aggregate base at all of the boring and trench locations, extending to the maximum depth explored of 50± feet. The alluvium generally consists of dense to very dense gravelly fine to coarse sands and fine to coarse sandy gravels and fine to medium sands with occasional to extensive cobbles and occasional boulders. One of the boring locations encountered a layer of silty fine sand with trace amounts of medium to coarse sands at depths of 27 to 29½± feet below existing site grades.

Free water was not encountered during excavation of any of the trenches or drilling of the borings. Based on the lack of any water within the trenches or borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the borings.

4.7.2 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☒	☐
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☐	☒

i) The Proposed Project site is not located within an Alquist-Priolo Earthquake Fault Zone. Furthermore, SCG did not identify any evidence of faulting during the geotechnical investigation. Therefore, the possibility of significant fault rupture on the site is considered to be low and a less than significant impact would occur.

ii) The Proposed Project site is located in an area which is subject to strong ground motions due to earthquakes. A site-specific seismic hazards analysis was not performed as a part of the geotechnical investigation. However, numerous faults capable of producing significant ground motions are located near the Proposed Project site. Due to economic considerations, it is not

generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structure will, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life. The 2016 California Building Code (CBC) was adopted by all municipalities within Southern California on January 1, 2017. The CBC provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. Specific seismic design parameters presented within the SCG geotechnical investigation are based on the soil profile and the proximity of known faults with respect to the subject site. Therefore, a less than significant impact would occur.

iii) Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The liquefaction evaluation performed by SCG indicates that none of the soils below the historic high groundwater table are subject to liquefaction during the design seismic event. Based on the results of this analysis, no design considerations related to liquefaction are considered warranted for this Proposed Project. A less than significant impact would occur.

iv) As mentioned previously, the site topography appears to slope gradually to the south at a gradient of approximately 1± percent. Topography ranges in elevations from 363± feet msl in the northern area of the site to a minimum elevation of 343± feet msl along the southern property line. The Proposed Project site is relatively flat, landslides are not a factor and no impact would occur.

As a City standard condition of approval, the Proposed Project will be required to conform to the geotechnical design and construction recommendations in the project-specific Geotechnical Investigation (SCG 2018). Therefore, risks associated with the foregoing Geology and Soils conditions would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Best Management Practices (BMPs) are included as part of the Storm Water Pollution Prevention Plan (SWPPP) prepared for the Proposed Project and would be implemented to manage erosion and the loss of topsoil during construction-related activities (see Hydrology and Water Quality (IX.) Environmental Checklist and Discussion). Soil erosion impacts would be reduced to a less than significant impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒

Based on the results of the geotechnical analysis, the proposed development is not at risk for landslides, settlement and/or slippage. In addition, the proposed development will not adversely affect the geologic stability of the adjacent properties. This finding is in accordance with Section 111 of the Los Angeles County Building Code. Unstable soils are not present on the Proposed Project site and no impact would occur. No further analysis of this issue is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒

The near-surface soils generally consist of silty fine sands and gravelly sands. These materials have been visually classified as very low to non-expansive. Therefore, no design considerations related to expansive soils are considered warranted for this site and no impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

The site is generally underlain by dense to very dense well-graded sands and sandy gravels. The soils encountered at the boring and trench locations generally possess significant over-sized material including extensive cobble content and occasional boulders throughout the depths explored. None of the soils observed are prohibitive to the installation of waste water disposal systems. No impact would occur. No further analysis of this issue is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

The Proposed Project site is located in the San Gabriel Valley, which is filled with sediments derived as alluvial fan deposits from the San Gabriel Mountains to the north and as fluvial deposits transported by the San Gabriel River to the west. The Proposed Project site is mapped as surficial Quaternary alluvium, consisting of alluvial gravel, comprised of dense to very dense well-graded sands and sandy gravels. The coarse-grained, younger alluvial surficial deposits have a low paleontological sensitivity. As Proposed Project excavations for utilities are not expected to exceed depths of 3-4 feet below ground surface, excavations would not encounter older, finer-grained Pleistocene age deposits found in the area at depths as shallow as 10 feet below ground surface and considered to have a moderate to high paleontological sensitivity. No unique geologic features have been identified onsite. As such, no impacts to paleontological resources or unique geologic resources are anticipated and a less than significant impact would occur.

4.8 Greenhouse Gas Emissions

4.8.1 Environmental Setting

Greenhouse gas (GHG) emissions are released as byproducts of fossil fuel combustion, waste disposal, energy use, land use changes, and other human activities. This release of gases, such as CO_2, methane (CH_4), nitrous oxide (N_2O), and chlorofluorocarbons, creates a blanket around the earth that allows light to pass through, but traps heat at the surface, preventing its escape into space. While this is a naturally occurring process known as the greenhouse effect, human activities have accelerated the generation of GHGs beyond natural levels. Estimates of GHG emissions are often presented in carbon dioxide equivalents (CO_2e). Expressing GHG emissions in carbon dioxide equivalents takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted. The SCAQMD provides guidance to local lead agencies on determining significance for GHG emissions in CEQA documents.

4.8.2 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☒	☐	☐	☐

Construction-related activities that would generate Greenhouse Gas Emissions (GHG) emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Proposed Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Operation of the Proposed Project would result in GHG emissions predominantly associated with motor vehicle use (i.e. trucks and personal vehicles). The City of Irwindale has not adopted any numerical thresholds of significance for GHG emissions. Significance of the Proposed Project's GHG impacts will be based on compliance with Assembly Bill 32 and the Draft SCAQMD CEQA GHG Significance Thresholds. Due to the Project's potential to emit GHGs, a Project-specific GHG emissions assessment shall be prepared for the Project. Results of the GHG emissions report will be documented in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☒	☐	☐	☐

The City of Irwindale has not adopted a GHG-reduction plan. However, State policies and standards adopted for the purpose of reducing GHG emissions include Executive Order (EO) S-3-05, AB 32, and SB 375. The quantitative goal of these regulations is to reduce GHG emissions to 19909 levels by 2020, to 40 percent below 1990 levels by 2030, and to 80 percent below 1990 levels by 2050. A Project-specific GHG emissions report shall be prepared to determine whether the Project would be consistent with GHG reduction goals, standards and policies adopted by the State. The required EIR shall evaluate project consistency with applicable plans, policies and regulations adopted for the purpose of reducing GHG emissions.

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

A Phase I Environmental Site Assessment (ESA) was performed for the Proposed Project site by Leymaster Environmental Consulting, LLC in July 2018 (Leymaster 2018). The purpose of the ESA is to provide an assessment concerning environmental conditions as they exist at the Property. This assessment was conducted utilizing generally accepted ESA industry standards in accordance with ASTM E 1527-13, Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process and EPA Final All Appropriate Inquiries (AAI) standard practices.

Results of the ESA include historic research on underground fuel tanks previously installed and removed onsite and the results of their corresponding soil studies and resolutions. The former tanks were determined not to represent an environmental concern. The Proposed Project site is listed in multiple environmental hazards databases as searched by Environmental Data Resources, Inc. (EDR) as part of the ESA. In each case, no substantive information was provided that would indicate a significant environmental threat or concern to the Proposed Project site.

No environmental concerns have been identified for the Proposed Project site as a result of the site listings in the ESA and supplemental agency review attachments.

4.9.2 Hazards and Hazardous Materials (IX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☒	☐	☐	☐

The specific businesses or tenants that will occupy the Project's proposed building are not known at this time. The Project site is located within the M-2 (Heavy Manufacturing) Zone and is designated for Industrial/Business Park use. Based on the list of land uses permitted in the City's M-2 zone, it is possible that hazardous materials could be used during the course of daily operations, including the storage and use of refrigerant that may be used on-site (in the event that cold storage is provided on-site). The Project's potential to create a significant hazard to the public or the environment through the routing transport, use or disposal of hazardous materials during long-term operation shall be analyzed in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☒	☐	☐	☐

See response to Item (a) above.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

Bursch Elementary School in Baldwin Park is located approximately one mile southeast of the Proposed Project. Merwin Elementary School is the only public school located in the City of Irwindale. It is located approximately three miles east of the Proposed Project site. There are no schools known to exist within one-quarter mile of the Project site. No impact would occur. No further analysis of this issue is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐

As mentioned above, the Proposed Project site is listed in multiple environmental hazards databases as searched by Environmental Data Resources, Inc. (EDR) as part of the ESA. In each case, no substantive information was provided that would indicate a significant environmental threat or concern to the Proposed Project site. No environmental hazard concerns are known to exist at the Proposed Project site. A less than significant impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

The closest airport to the Proposed Project site is San Gabriel Airport, located approximately 2.6 miles to the southwest. The Proposed Project site is not addressed in the airport's land use plan. No impact would occur. No further analysis of this issue is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Implementation of the Proposed Project would increase the potential need for emergency access to and from the site. The Project design proposes access to the site from three driveways (two from Los Angeles Street and one from Rivergrade Road). During the course of the City of Irwindale's required review of the Proposed Project's applications, the Proposed Project's design would be reviewed to ensure that adequate access to and from the site and around the proposed buildings is provided for emergency vehicles. With adherence to the City of Irwindale requirements for emergency vehicle access, impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

The Proposed Project site is located in a heavily developed industrial area and is not located on or in the vicinity of wildlands. Therefore, no impacts involving wildland fires would occur. No further analysis of this issue is required.

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

Regional Hydrology

The Proposed Project is located within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB), which administers the water quality control plan (Basin Plan) within Los Angeles County. The boundaries of the Santa Ana River Basin are defined in part by physical watershed divisions and in part by administrative boundaries (i.e. Orange County/Los Angeles County line). The Proposed Project is within the San Gabriel Valley hydrologic area (Basin No. 405.40), and the Main San Gabriel hydrologic sub-area (Basin No. 405.41) one of the many subareas within the Los Angeles RWQCB. The Project site is encompassed by the 55-square mile Santa Fe Flood Control Basin-San Gabriel River Sub-watershed (USGS 2016).

Site Hydrology and On-Site Drainage

The Project site is located on flat terrain and there are no slopes, natural drainage systems or channel crossings on the site. The northerly portion of the Project site surface drains south-westerly to Rivergrade Road. Runoff is then conveyed further south-westerly in Rivergrade Road to several City-maintained street catch basins. The south-easterly portion of the Project site surface drains southerly to a City-maintained catch basin in Los Angeles Street. Runoff is then conveyed further south via storm drain to a detention basin within the quarry facility south of Los Angeles Street. The south-westerly portion of the Project site surface drains southerly to Los Angeles Street. Runoff is then conveyed westerly to a County-maintained street catch basin in Los Angeles Street.

4.10.2 Hydrology and Water Quality (X) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☒	☐	☐	☐

The California Porter-Cologne Water Quality Control Act (Section 13000 (Water Quality) et seq., of the California Water Code), and the Federal Water Pollution Control Act Amendment of 1972 (also referred to as the Clean Water Act (CWA) require that comprehensive water quality control plans be developed for all waters within the State of California. The Project site is located within the jurisdiction of the Los Angeles Regional Water Quality Control Board (RWQCB). Construction of the Project would involve grading, paving, utility installation, building construction, and landscaping installation, which would result in the generation of potential water quality pollutants such as silt, debris, chemical paints, and other solvents with the potential to affect water quality. Long-term operation of the Project site with land use allowed under the M-2 (Heavy Manufacturing) zone are anticipated to generate storm water pollutants such as bacterial indicators, metals, nutrients, pesticides, toxic organic compounds, sediments, trash and debris, and oil and grease. The Project's potential to violate any water quality standards or waste discharge requirements during short-term construction and/or long-term operational activities shall be analyzed in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☒	☐	☐	☐

The site-specific geotechnical investigation of the Proposed Project site (SCG 2018) indicates the static groundwater table at the site existed at a depth in excess of 50± feet at the time of the subsurface exploration. Historic groundwater data indicates the historic high groundwater level for the site is 35 feet below ground surface. According to a Low Impact Development (LID) Report (Thienes Engineering 2018) prepared for the Proposed Project, the Project would replace 5,000 square feet or more of impervious surface area on the developed site. This redevelopment of the site would result in an increase of more than 50 percent or the impervious surfaces of the previous concrete manufacturing development, which was not subject to Low Impact Development (LID) requirements. The Project impact on groundwater recharge, groundwater supplies and sustainable groundwater management of the basin will be analyzed in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) result in substantial erosion or siltation on- or off-site;	☒	☐	☐	☐

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☒	☐	☐	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☒	☐	☐	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐

(i) Construction of the Proposed Project would involve grading of the site's existing ground contours and altering the site's existing drainage pattern. Best Management Practices (BMPs) would be included as part of the Storm Water Pollution Prevention Plan (SWPPP) prepared for the Proposed Project and would be implemented to control erosion and siltation impacts during construction activities. Upon buildout of the Project, stormwater runoff from all portions of the Project site would be captured by on-site storm drains that would be routed to catch basins onsite and at Los Angeles Street and Rivergrade Road. Nevertheless, the required EIR will fully analyze the potential for erosion or siltation on- or off-site.

(ii) Preliminary Hydrology Calculations (Thienes Engineering 2018) indicate the Proposed Project condition 50-year peak flow rates from the Proposed Project site to the City-maintained catch basins in Rivergrade Road and Los Angeles Street are higher than existing condition rates. Detention in the onsite truck yards is proposed to reduce proposed condition discharge to below existing condition discharge. The required EIR will analyze the impact of the Proposed Project on rates or amounts of surface runoff and potential flooding.

(iii) According to the site-specific LID Report (Thienes Engineering 2018), an underground Corrugated Metal Pipe (CMP) detention system will be utilized to treat the Stormwater Quality Design Volume and route stormwater greater than the 85th percentile into the mainline. Impacts of runoff on stormwater drainage system capacities and additional sources of polluted runoff will be fully analyzed in the required EIR.

(iv) Pursuant to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 06037C1700F, the Proposed Project site is located in Zone X, which is determined to be outside the 0.2% annual chance floodplain. Therefore, impacts related to placement of structures within a 100-year flood hazard area would be less than significant. No further discussion of this subject is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐

According to the City of Irwindale General Plan Safety Element (2008), the Project site is not identified within a flood hazard, tsunami, or seiche zone. Due to the depth of the Vulcan Durbin Quarry area across Los Angeles Street south of the Project site, impounded water in this quarry is not expected to overtop quarry walls during a seismic event. Therefore, the possibility of an earthquake induced seiche from the Vulcan Durbin Quarry would be less than significant. As a result, risk of release of pollutants due to project inundation from these sources is less than significant. No further discussion of this issue is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☒	☐	☐	☐

The required EIR will analyze the potential for Proposed Project conflicts with the applicable water quality control plan and groundwater management plans.

4.11 Land Use and Planning

4.11.1 Environmental Setting

The Proposed Project site is located in an area zoned M-2 Heavy Manufacturing. Since 1967, the Proposed Project site has been used by a pre-cast concrete manufacturing company. The Proposed Project would involve the demolition of existing on-site buildings and the construction of a ±528,710 square feet stand-alone concrete tilt-up building, as well as corresponding parking, landscaping, and utilities. would develop an industrial warehouse project that is compatible with surrounding uses. Compatibility with surrounding land uses and conformity with established City Commercial and Industrial Design Guidelines would be established through the City's project review and Site Development Permit. The Project Proponent is pursuing the Project on a speculative basis, meaning that the proposed building's future tenants are not yet identified.

4.11.2 Land Use and Planning (XI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒

As mentioned above, the Proposed Project site is zoned for Heavy Manufacturing. The Proposed Project would be consistent with this zoning designation and would not divide an established community. No impact would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

The Proposed Project would demolish several existing buildings and ancillary structures associated with a former concrete manufacturing business and construct a light industrial/warehouse building and associated parking, utilities, and landscaping. While this use is consistent with the Proposed Project site's current M-2 Heavy Manufacturing zoning designation, no specific tenant(s) have been identified to occupy the proposed building. The Proposed Project is compatible with surrounding uses and shall be required to demonstrate compliance with established City Commercial and Industrial Design Guidelines. A less than significant impact is anticipated. Nevertheless, Proposed Project compliance with land use plans, zoning and the Design Guidelines will be addressed in the required EIR.

4.12 Mineral Resources

4.12.1 Environmental Setting

Significant mineral aggregate resources are located within the City boundaries due to the San Gabriel River flood plain. Because of this, the City has many construction aggregate quarry operations. Some areas within the City contain regionally significant mineral deposits in accordance with the State Mining and Reclamation Act (SMARA), at Public Resources Code section 2762 and State Mining and Geology Board Reclamation Regulations, 14 California Code of Regulations, at section 3676. These areas are detailed within the City General Plan as "Q Zones" (quarry zones). An active quarry is located on the other side of Los Angeles Street, south of the Proposed Project site. The Proposed Project is not located within a Q Zone.

4.12.2 Mineral Resources (XII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

The Proposed Project is not located on land associated with a past, current, or anticipated mining location. According to the City General Plan, the Proposed Project site is not located within an identified Q Zone. No impact would occur. No further analysis of this subject is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

The City General Plan details locations identified as Q Zones (quarry zones) as a means of designating those areas where quarries and related sand and gravel industries could locate. The Proposed Project is not located within a Q Zone and has been used a site for concrete manufacturing for decades. No impact would occur. No further analysis of this subject is required.

4.13 Noise

4.13.1 Environmental Setting

The Project site is located in an urbanized environment and is subject to typical urban noise sources, such as traffic, industrial operations, and outdoor activities. As the Project site is currently vacant, the principal noise source affecting the site is transportation noise from automobiles and trucks on surrounding roadways, including I-605, Los Angeles Street, Rivergrade Road and Littlejohn Street. Stationary noise sources may include heating, ventilation, and air conditioning (HVAC) systems, compressors, landscape maintenance equipment, or machinery associated with adjacent industrial or commercial uses to the west and east of the site.

4.13.2 Noise (XIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☒	☐	☐	☐

Project-related construction activities, as well as long-term operational activities (including light industrial/warehouse operations and projected increases in vehicular travel along area roadways), may expose persons in the vicinity of the Project site to noise levels in excess of standards in the City's Municipal Code, chapter 9.28, Noise Regulation (City of Irwindale 1976). An acoustical analysis will be prepared and the required EIR shall analyze the potential for substantial temporary or permanent increases in ambient noise levels in the vicinity of the Project in excess of local standards.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive groundborne vibration or groundborne noise levels?	☒	☐	☐	☐

Construction activities on the Project site may produce groundborne vibration or groundborne noise levels during earthwork/grading and the operation of heavy machinery. Long-term operation of the Proposed Project is not anticipated to result in perceptible levels of groundborne vibration or noise. The required EIR shall analyze the potential for generation of excessive groundborne vibration or noise levels.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

The closest airport to the Proposed Project site is San Gabriel Airport, located approximately 2.6 miles to the southwest. The Proposed Project site is not addressed in the airport's land use plan. The Project would

not expose people working in the Proposed Project area to excessive noise levels. No impact would occur. No further analysis of this issue is required.

4.14 Population and Housing

4.14.1 Environmental Setting

The City of Irwindale is a relatively small community of approximately 9.5 square miles in size. The City's industrial history and development patterns have been primarily shaped by the local mining industry and the abundance of both active and inactive quarries throughout the community. Given the abundance of natural resources and limited size of the city, Irwindale's population has remained small in comparison to adjacent jurisdictions and Los Angeles County as a whole. The Proposed Project is zoned M-2 Heavy Manufacturing and is not currently zoned for or used as housing. The nearest residences to the Proposed Project site are located approximately 700 feet to the east.

4.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐

The Proposed Project site was used as a concrete manufacturing business from 1967 until 2017 and is designated "Industrial/Business Park" in the City's General Plan. Moreover, the Proposed Project would be consistent with the site's current zoning designation of "Heavy Manufacturing (M-2)." Accordingly, the Project would not result in growth that was not already anticipated by the City of Irwindale General Plan. The Project site is served by existing public roadways and utility infrastructure is already installed beneath public rights of way that adjoin the property For these reasons, development of the Proposed Project would not result in direct or indirect growth in the area, and impacts would be less than significant. No further analysis of this subject is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

The Proposed Project site is zoned "Heavy Manufacturing (M-2)" and designated "Industrial/Business Park" according to the City's General Plan. The site does not contain any residential structures under

existing conditions. Accordingly, the Proposed Project would not substantially displace existing housing and would not require additional housing construction. No impact would occur and no further analysis of this subject is required.

4.15 Public Services

4.15.1 Environmental Setting

The City's General Plan (2008) describes its public services in its Public Safety, Resource Management, and Infrastructure elements. Information regarding police services, fire services, parks, and other public facilities is included in the section below.

Police Services

On November 1, 1960, the Irwindale Police Department was established with five motorcycles and one police unit. The department now consists of 28 full-time police officers, 7 reserve officers, and 11 civilian employees. The department's enforcement tools include a K-9 unit, stolen vehicle tracking devices, and two motor units and a commercial enforcement unit, each equipped with radar. Response times in most areas of the City are five minutes or less. The Department is responsible for staffing various activities aside from regular patrol duties that encompass calls for service from the business and residential community.

Fire Services

The City of Irwindale is included in the County of Los Angeles Consolidated Fire District, which maintains a single fire station in the City, Station No. 48. This station, located at 15546 Arrow Highway near the Civic Center, consists of 16 full-time fire fighters. The station's equipment resources include one pumper, one reserve truck, and a paramedic unit. The average response time throughout the City is 6 minutes. Additional emergency resources are available from other California Division of Forestry (CDF) stations (the station is located in the City of Baldwin Park). The CDF equipment includes a snorkel truck and a triple pump.

Schools

Merwin Elementary School is the only public school located in the City of Irwindale. It is located approximately 3 miles east of the Proposed Project site.

Parks

The City currently owns and maintains three parks; Irwindale Park (25-acres), Jardin de Roca Park (5-acres), and the Nora Fraijo Pocket Park. Irwindale Park is located in adjacent to City Hall in the central downtown portion of the City near the majority of the residential neighborhoods. Improvements at Irwindale Park include a gym, baseball field, children's playground, tennis courts, and an Olympic size swimming pool. The park also includes picnic tables located throughout the grounds, as well as a picnic shelter for group gatherings complete with gas ranges and electrical capabilities. The newly refurbished gym includes a basketball court, teen room (with big screen TV), and a weight room. The Jardin de Roca Park, located on the west side of Irwindale Avenue opposite City Hall, has a skate park, picnic tables, and playground equipment.

Other Public Facilities

Lack of infrastructure and public services can constrain the development of housing. Costs to extend infrastructure or to provide public services can deter the construction of housing, negatively impact the cost of housing, and the timing of development. The City has adequate domestic water service, public wastewater lines, roads, schools, trash, public facilities, parks and recreation, fire and police services for the level of development projected by the City.

4.15.2 Public Services (XV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☒	☐
Fire Protection?	☐	☐	☒	☐
Police Protection?	☐	☐	☒	☐
Schools?	☐	☐	☒	☐
Parks?	☐	☐	☒	☐
Other Public Facilities?	☐	☐	☒	☐

The Proposed Project consists of the demolition of buildings associated with a long-standing former concrete manufacturing plant and the development of a ±528,710 square feet stand-alone concrete tilt-up industrial building. The Proposed Project is consistent with the site's "Heavy Manufacturing (M-2)" zoning requirements. Additionally, the Proposed Project is consistent with the City's General Plan, which identifies public service levels sufficient to serve planned growth. Therefore, it is anticipated the Proposed Project would be adequately served by the City's public services during the construction and operational phases. The Project is not expected to generate significant need for additional fire and police protection, nor additional schools, parks, or other public facilities. A less than significant impact would occur and no further analysis of this subject is required.

4.16 Recreation

4.16.1 Environmental Setting

As discussed in Section 4.15 Public Services, The City currently owns and maintains three parks; Irwindale Park (25-acres), Jardin de Roca Park (5- acres), and the Nora Fraijo Pocket Park. Irwindale Park is located in adjacent to City Hall in the central downtown portion of the City near the majority of the residential neighborhoods. Additionally, The Los Angeles County Parks and Recreation Department leases 650-acres of the Santa Fe Dam Reservoir Area for public recreational uses. The park area within the Santa Fe Dam accommodates thousands of picnic bound guests, particularly on national holidays, and often is the site for festival and concert events. Current summer usage may range from 6,000 to 10,000 visitors per day, with occasional peaks in patronage of up to 20,000 persons. The Recreation Area is located approximately two miles northeast of the Proposed Project site.

4.16.2 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

The Proposed Project would not impact existing neighborhood parks. The Project would not increase local or regional population that would result in any increase in demand for neighborhood or regional parks. No impact would occur. No further analysis of this subject is required.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☐	☒

The Proposed Project does not include recreational facilities and would not require construction or expansion of recreational facilities. No impact would occur. No further analysis of this subject is required.

4.17 Transportation

4.17.1 Environmental Setting

The existing roadway system is comprised of key roadways that traverse defined traffic study intersections that serve the Project site. Principal among these are Los Angeles Street/Lower Azusa Road, Rivergrade

Road, and Little John Street that directly serve the Project site. Regional access to the site is derived principally from Los Angeles Street via the nearby San Gabriel Freeway (I-605), A site-specific traffic study will be prepared according to City of Irwindale and Caltrans reporting requirements for inclusion in the required EIR for the Proposed Project. The study shall quantify the volume of vehicular traffic anticipated to travel to and from the Project site. The traffic study will model the effects of Project-related traffic on the local and regional circulation system and identify mitigation measures to reduce significant effects.

4.17.2 Transportation (XVII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☒	☐	☐	☐

The Proposed Project would contribute an increased volume of vehicular traffic to regional and local roadways, including but not limited to I-605, Los Angeles Street, Rivergrade Road, and Little John Street. This has the potential to adversely affect the performance of the local circulation system on a direct and/or cumulative level. A site-specific traffic study shall be prepared according to the City of Irwindale Policy Guidelines for Traffic Impact Reports (2014) and Caltrans Guide for the Preparation of Traffic Impact Studies (2002). The study shall quantify the volume of vehicular traffic anticipated to travel to and from the Project site. The traffic analysis will also model the effects of Project-related traffic on the local circulation system, taking all modes of transportation into account. The required EIR shall disclose the findings of the traffic study and evaluate the Project's consistency with applicable circulation plans, ordinances, and policies.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒

CEQA Guidelines section 15064.3, subdivision (b) details the use of vehicle miles traveled (VMT) to assess the significance of transportation impacts. As detailed in CEQA Guidelines section 15064.3, subdivision (c), a lead agency may elect to be governed by the provisions of this section immediately. Beginning on July 1, 2020, the provisions of this section shall apply statewide. As of the preparation of this document (June 2019), VMT analysis has not been adopted by the City of Irwindale, and therefore there is no conflict with provisions of Section 15064.3, subdivision (b).

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?		☐	☒	☐

All construction planned as part of the Proposed Project would be in conformance with the applicable City of Irwindale standards and would not result in any hazards due to a design feature. The Proposed Project's design would be compatible in transportation design with existing City of Irwindale General Plan designation of "Industrial/Business Park" and "Heavy Manufacturing (M-2)" zoning designation. Thus, impacts are anticipated to be less than significant. However, this impact will be further analyzed in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in inadequate emergency access?	☐	☐	☒	☐

Implementation of the Proposed Project would result in construction and operation of a light industrial/warehouse building, which would increase the need for emergency access to and from the site. During the course of the City of Irwindale's required review of the Proposed Project's applications, the Proposed Project's design would be reviewed to ensure that adequate access to and from the site and around the proposed buildings is provided for emergency vehicles. With adherence to the City of Irwindale requirements for emergency vehicle access, impacts are anticipated to be less than significant. Nevertheless, this impact will be further analyzed in the required EIR.

4.18 Tribal Cultural Resources

4.18.1 Environmental Setting

On March 13, 2019, the City of Irwindale sent Proposed Project notification letters to the following California Native American tribes, which had previously submitted AB 52 general consultation request letters pursuant to AB 52 (21080.3.1(d) of the Public Resources Code): Gabrielino-Tongva Tribe, Gabrielino/Tongva Nation, Gabrielino Tongva Nation, Gabrielino/Tongva San Gabriel Band of Mission Indians, Gabrielino Tongva Indians of California Tribal Council, and Gabrielino Band of Mission Indians-Kizh Nation. Each recipient was provided a brief description of the Proposed Project and its location, the lead agency contact information, and a notification that the tribe has 30 days to request consultation. As a result of the notification letters, the City received a single request for consultation from the Gabrielino Band of Mission Indians–Kizh Nation. A tribal consultation conference with the Kizh Nation was held on March 14, 2019. Although no known tribal cultural resources at the Project site were identified, tribal

representatives indicated the Proposed Project site lies within their ancestral tribal territory and is therefore considered culturally sensitive for potential buried cultural materials.

The status and results of the tribal cultural resources consultation will be documented in the required EIR.

4.18.2 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☒	☐	☐

(i) According to the project-specific Historic Resources Inventory Report (Dudek 2019), the Proposed Project site is neither listed or eligible for listing in the California Register of Historical Resources, nor in a local register of historical resources pursuant to PRC 5020.1(k). No impact would occur.

(ii) The Proposed Project would not result in significant impacts to known TCRs. However, as a result of the AB 52 consultation the Project area has been identified as being culturally sensitive and has the potential to contain unknown TCRs. Significant impacts may occur from the discovery of unknown TCRs during ground disturbing activities from Project construction. Impacts to unknown TCRs would be less than significant with the implementation of mitigation measures that include an opportunity for tribal participation in monitoring of subsurface excavations. The potential for significant impact on tribal cultural resources will be analyzed in the required EIR.

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

The Project site previously supported an active pre-cast concrete manufacturing facility that utilized existing utility connections at the site. The Proposed Project would include new connections to existing gas, water, and sewer lines off of Los Angeles Boulevard. Additionally, it would involve the addition of fire hydrants, storm drains, drainage basins.

The Infrastructure Element in the City General Plan (City 2008) details the City's utilities and service systems, including water, wastewater, and solid waste. According to the General Plan, The City has adequate domestic water service, public wastewater lines, roads, schools, trash, public facilities, parks and recreation, fire and police services for the level of development projected by the City. Language from the General Plan is included in the sections below.

Water Service

Several different water purveyors serve the City. The City of Azusa Water Department provides basic service to the largest portion of Irwindale from its most northeasterly boundaries to Ornelas Street, including all of the Santa Fe Dam area located to the east of the San Gabriel River Freeway. Irwindale is now close to reaching its capacity with the Valley County Water District, located in the City of Baldwin Park. This District serves the southeasterly portion of the City as well as an area generally bounded by Arrow Highway, Live Oak Avenue, and the I-605 Freeway. California-American Water Company, located in the City of San Marino, serves the area north of the Buena Vista Channel to the Duarte boundary with potable water for domestic, landscaping, and fire protection purposes. Finally, the San Gabriel Valley Water Company, located in the City of El Monte, serves approximately 50 customers in the Vulcan's Durbin Pit area as well as the area generally located between Lower Azusa Road and Ramona Boulevard. The Southern California Water Company serves a portion of the westernmost part of the City north of Live Oak Avenue.

Wastewater

The Los Angeles County Sanitation Districts (LACSD) provide all of Irwindale's sewer services. The majority of the City is served by Sanitation District 22; with a small portion of its southwestern area served by District 15. The District's trunk sewer lines extend throughout the City, with no under-served areas. The Los Angeles County Sewer Maintenance District, located in the City of Alhambra, provides maintenance for the City's six miles of sewers on a contract basis, including emergency services on a 24-hour basis.

Solid Waste

The City has an exclusive franchise agreement with Athens Services to provide mixed waste collection services and other available programs to its residents and business community. Several quarry sites throughout the City are designated for landfill use.

4.19.2 Utilities and Service Systems (XIX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐

The Proposed Project would install connections to existing utility lines, including gas, water, and sewer, off Los Angeles Boulevard. Small encroachments into adjacent public rights of way of developed/paved streets to connect to existing utilities will be required to serve the Project. Trenching for new onsite utility lines will be required. Physical disturbance for the installation of these new utility lines would be limited. and largely indistinguishable from overall grading for development on the Proposed Project site. Impacts would be less than significant.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☒	☐	☐	☐

The Proposed Project site is served by the Valley County Water District, which procures its water supplies primarily from the Main Basin and imported water. According to the District's 2015 Urban Water Management Plan (2016), the minimum water supplies available at the end of an average water year, a single dry year, and multiple dry years would be at least equal if not greater than the District's water demand. The Project proposes a 528,710 square foot industrial building on a speculative basis. As the future tenant(s) are unknown, a General Light Industrial use is conservatively assumed for purposes of water utility demand. This land use type would be expected to yield up 1,142 employees at the Proposed Project site[1]. As such, the Proposed Project may be subject to the provisions of Senate Bill 610 (Costa), which would require preparation of a Water Supply Assessment (WSA) to verify that the proposed development can be adequately served by water supplies without the need for new or expanded

[1] Source: Building Area Per Employee by Business Type; U.S. Green Building Council (May 2008).

entitlements[2]. The availability of sufficient water supplies to serve the Proposed Project and potential need for a WSA shall be evaluated in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐

Wastewater services are provided by LACSD, which owns and operates 11 wastewater facilities throughout Los Angeles County. Wastewater generated by the Proposed Project would be directed to the Joint Outfall System, which treats approximately 400 million gallons per day. As a speculative Industrial/Warehouse building project without an identified tenant(s), the anticipated daily wastewater generation from the Project is unknown. Based on the lack of a project-specific sewer capacity study and lack of a specific LACSD wastewater generation factor for General Industrial Use, the availability of adequate wastewater treatment capacity to serve the Proposed Project will be evaluated in the required EIR.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

Waste would be generated during the construction and operation phases of the Proposed Project. Construction waste would primarily consist of discarded materials and packaging. Based on the building square footage of 528,170 and the US EPA's construction waste generation factor of 4.34 pounds per s.f., approximately 1,146 tons of waste would be generated during the construction phase. Based on a Light Industrial waste generation factor of 41.64 pounds of waste per day per employee obtained from CalRecycle, the long-term, ongoing operation of the Proposed Project would generate approximately 0.27 tons of waste per day (CalRecycle, 2019). According to the City General Plan (2008), the City has adequate domestic water service, public wastewater lines, roads, schools, trash, public facilities, parks and recreation, fire and police services for the level of development projected by the City. A less than significant impact would occur.

[2] SB 610 requires preparation of a Water Supply Assessment (WSA) for any "proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area."

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

The Proposed Project would be required to comply with all Resource Conservation and Recovery Act (RCRA) Regulations, including Title 40 of the Code of Federal Regulations (CFR), as well as City of Irwindale waste reduction programs. In accordance with Assembly Bill 341, the Project would be required to work with Athens Services to implement a commercial recycling program during the operational phase. Additionally, The Proposed Project will seek a Site Plan and Design Review Permit (DA), as well as grading and building permits from the City. The implementation of these programs would reduce the amount of solid waste generated be the Proposed Project and diverted to landfills. A less than significant impact would occur.

4.20 Wildfire

4.20.1 Environmental Setting

Government Code 51175-89 directs the California Department of Forestry and Fire Protection (CAL FIRE) to identify areas of very high fire hazard severity zones within Local Responsibility Areas (LRA). Mapping of the areas, referred to as Very High Fire Hazard Severity Zones (VHFHSZ), is based on data and models of, potential fuels over a 30 to 50-year time horizon and their associated expected fire behavior, and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure (including firebrands) to buildings.

The Proposed Project is located within a heavily industrialized area and is not in the immediate vicinity of any natural or wildlife areas. It is labeled in the Irwindale submap as non-VHFHSZ (CAL FIRE 2012).

4.20.2 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

The Proposed Project is not located within or near a very high fire hazard severity zone. The Proposed Project is located within a heavily industrialized area and is not in the immediate vicinity of any natural or wildlife areas. It is labeled in the Irwindale submap as non-VHFHSZ (CAL FIRE 2012). Access to the Proposed Project is planned at multiple driveway locations on Los Angeles Street and at Rivergrade Road, thereby facilitating emergency response and evacuation, if necessary. A less than significant impact would occur. No further analysis of this subject is required.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☒	☐

The Proposed Project is not located within or near a very high fire hazard severity zone. The Proposed Project is located within a heavily industrialized area and is not in the immediate vicinity of any natural or wildlife areas. It is labeled in the Irwindale submap as non-VHFHSZ (CAL FIRE 2012). A less than significant impact would occur. No further analysis of this subject is required.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☒	☐

The Proposed Project is not located within or near a very high fire hazard severity zone. The Proposed Project is located within a heavily industrialized area and will require utility connections to serve the proposed industrial use. However, the Proposed Project is not in the immediate vicinity of any natural vegetation or wildlife areas. It is labeled in the Irwindale submap as non-VHFHSZ (CAL FIRE 2012). A less than significant impact would occur. No further analysis is required.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☒	☐

The Proposed Project is not located within or near a very high fire hazard severity zone. The Proposed Project is located within a heavily industrialized area and is not in the immediate vicinity of any natural or wildlife areas. It is labeled in the Irwindale submap as non-VHFHSZ (CAL FIRE 2012). A less than significant impact would occur. No further analysis is required.

4.21 Mandatory Findings of Significance

4.21.1 Mandatory Findings of Significance (XXI) Environmental Checklist and Discussion

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☒	☐	☐	☐

Based on evaluation and discussions contained in this Initial Study, the Proposed Project would have a potentially significant impact in the following issue areas: air quality, cultural resources, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, noise, transportation and traffic, and utilities and service systems. These environmental issue areas will be evaluated in the EIR and mitigation measures presented as appropriate.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☒	☐	☐	☐

Cumulative impacts are potentially significant. The EIR will address the contribution of the Proposed Project to any identified cumulative impacts.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☒	☐	☐	☐

Based on analysis provided in the Initial Study, there would be potentially significant impacts on human beings. Analysis of direct and indirect impacts to human beings, along with identification of any applicable mitigation measures, requires additional analysis in the required EIR.

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SECTION 5.0 LIST OF PREPARERS

5.1 City of Irwindale

Lead Agency

Marilyn Simpson, Community Development Manager/City Planner

5.2 ECORP Consulting, Inc.

CEQA Documentation/Air Quality/Greenhouse Gas/Noise

Tom Holm, Senior Environmental Planner/Project Manager

Jessie Dubus, Associate Environmental Scientist

Lindsay Liegler, Assistant Environmental Planner

Seth Myers, Air Quality and Noise Specialist

Wendy Blumel, Assistant Cultural Group Manager

Laura Hesse, Technical Editor

5.3 KOA Corporation

Transportation/Traffic

Brian Marchetti, Senior Transportation Planner

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SECTION 6.0 BIBLIOGRAPHY

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Notice of Preparation

Date of Notice:	August 14, 2019
To:	Agencies, Organizations, and Interested Parties
Subject:	Notice of Preparation of a Draft Environmental Impact Report
Project Title:	13131 Los Angeles Industrial Street Project
Project Location:	13131 Los Angeles Street, Irwindale, California 91706
Lead Agency:	City of Irwindale
Lead Agency Contact:	Marilyn Simpson Community Development Manager City of Irwindale, Community Development Department 16102 Arrow Highway, Second Floor Irwindale, CA 91706 (626) 430-2209 msimpson@IrwindaleCA.gov

This Notice of Preparation (NOP) has been prepared to notify agencies and interested parties that the City of Irwindale (City), as the Lead Agency, will prepare an Environmental Impact Report (EIR) pursuant to the California Environmental Quality Act (CEQA) for the proposed 13131 Los Angeles Industrial Street Project (proposed project). The project description, location, and the potential environmental effects of the project are included below in this NOP. The City requests your comments as to the scope and content of the EIR. Comments must be submitted in writing pursuant to the directions below. If you represent an agency, the City is seeking comments as to the scope and content of the environmental information in the document which is germane to your agency's statutory responsibilities in connection with the proposed project. To the extent that your agency has authority to issue permits or take other actions related to the project, your agency will need to use the EIR prepared by the City when considering your permitting decisions or other approval for the project.

In accordance with the time limits established by CEQA, the City requests comments be received by the close of business on September 13, 2019. **Please send your comments, including a return address and contact name, via mail to the identified Lead Agency Contact.**

Scoping Meeting. In accordance with CEQA Guidelines 15082, a public Scoping Meeting will be held on August 26, 2019 at 6:00 PM at the Irwindale Community Center at 16102 Arrow Highway, Irwindale, CA.

Project Location:

The Project is located at 13131 Los Angeles Street (APN: 8353-020-007), east of the San Gabriel River and Interstate 605 in the western portion of the City of Irwindale (Figure 1. Regional Location). Surrounding the Project site are commercial and industrial buildings (City of Baldwin Park) to the east, Rivergrade Road and the San Gabriel River Freeway (I-605) to the north, an industrial building (SCE Material Supply, Irwindale Distribution Center) to the west, Los Angeles Street and a gravel quarry (Vulcan Durbin Materials Plant) to the south (Figure 2. Project Location).

Until recently, the approximate 24.9-acre Proposed Project site has been the location of a former hollow core concrete manufacturing business. The site has largely been cleared of facilities associated with this former use, with the exception of two small buildings (an office and weld shop), vehicle bay, three trailers, gravel bins, a batch plant, concrete basting beds, and several plywood sheds. The vacant site is largely unpaved and has been highly disturbed through decades of industrial manufacturing and heavy truck usage.

Project Description:

The 24.9-acre Project site was previously occupied by a pre-cast concrete manufacturing and distribution business from 1967 until 2017. This use took advantage of nearby sand and gravel quarries for source material and convenient access to the San Gabriel Freeway (I-605) for heavy duty truck trips. The current Project proponent, Duke Realty, approached the City in 2018 with plans for a speculative concrete tilt-up building on the site.

Demolition of the remaining on-site buildings and structures may proceed independently and in advance of proposed project construction of a stand-alone concrete tilt-up building (±528,710 square feet).. The proposed building would be 47.5 feet tall, with architectural features extending up to 53.5 feet tall. The building would feature forklift ramps and roll-up dock doors on the northern and western sides, respectively. The Proposed Project will include 80 trailer parking spaces on the southeast corner of the site, 70 trailer parking spaces along the western end of the site, and 261 standard vehicle parking spaces around the perimeter of the building (Figure 3. Site Plan). Landscaping and a fire lane will be installed around the perimeter of the building. The Project proponent is pursuing the Project on a speculative basis, meaning that the proposed building's future tenants are not yet identified.

The land is zoned M-2 (Heavy Manufacturing), designated "Industrial/Business Park" by the City's General Plan, and subject to the Irwindale Commercial & Industrial Design Guidelines. The Project will require the following approvals from the City:

- Demolition Permit

- Certification of the Environmental Impact Report

- Site Plan and Design Review Permit (DA) to address the site configuration, design, location, and impact of the proposed use and the compliance of the Project with the established Zoning Code standards and the "City of Irwindale Commercial and Industrial Design Guidelines.

Other public agencies whose approval (e.g. permits) is required will include, but are not limited to the following:

a) Regional Water Quality Control Board (RWQCB), Los Angeles Region – National Pollutant Discharge Elimination System (NPDES) Construction General Permit; Stormwater Pollution Prevention Plan (SWPPP)

b) Los Angeles County Department of Public Works/Building Division – Issuance of all permits related to onsite construction

The Proposed Project is anticipated to be built in a single phase, with grading and construction scheduled to commence in spring of 2020 if approved.

Potential Environmental Effects of the Proposed Project:

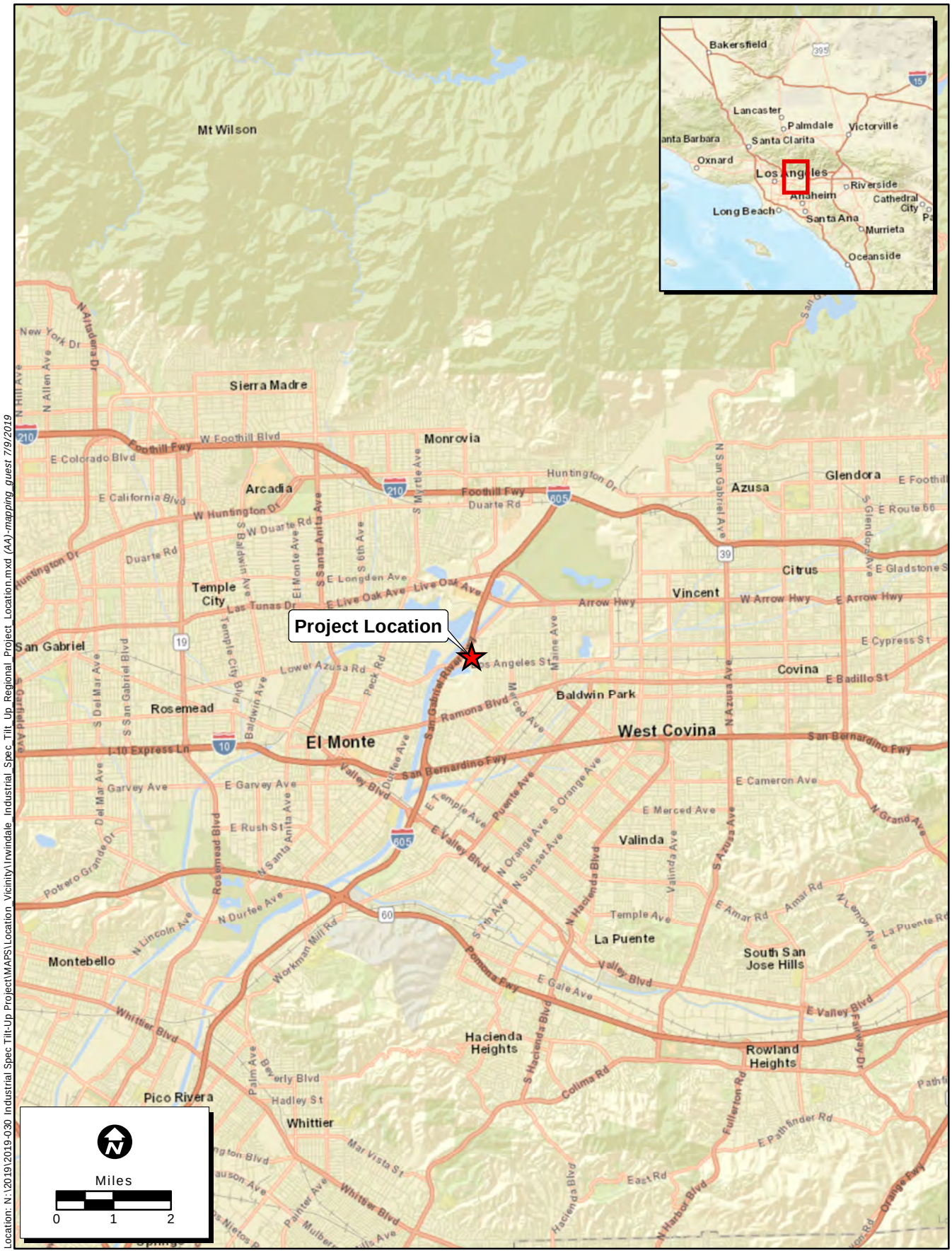
The EIR will evaluate the following environmental resource issues in addition to the CEQA-mandated topics such as cumulative impacts, growth inducement, and project alternatives:

- Air Quality
- Cultural Resources
- Energy
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems

The content of the EIR will be subject to input received during the NOP comment period.

Date: 8/14/19 Signature: Thomas Hahn

Attachments: Figure 1. Regional Location
Figure 2. Project Site
Figure 3. Site Plan



Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Location_Vicinity\Irwindale_Industrial_Spec_Tilt_Up_Regional_Project_Location.mxd (AA)-mapping_guest 7/9/2019

Map Date: 7/9/2019

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Regional Project Location

2019-030 Irwindale Industrial Spec Tilt-Up Project

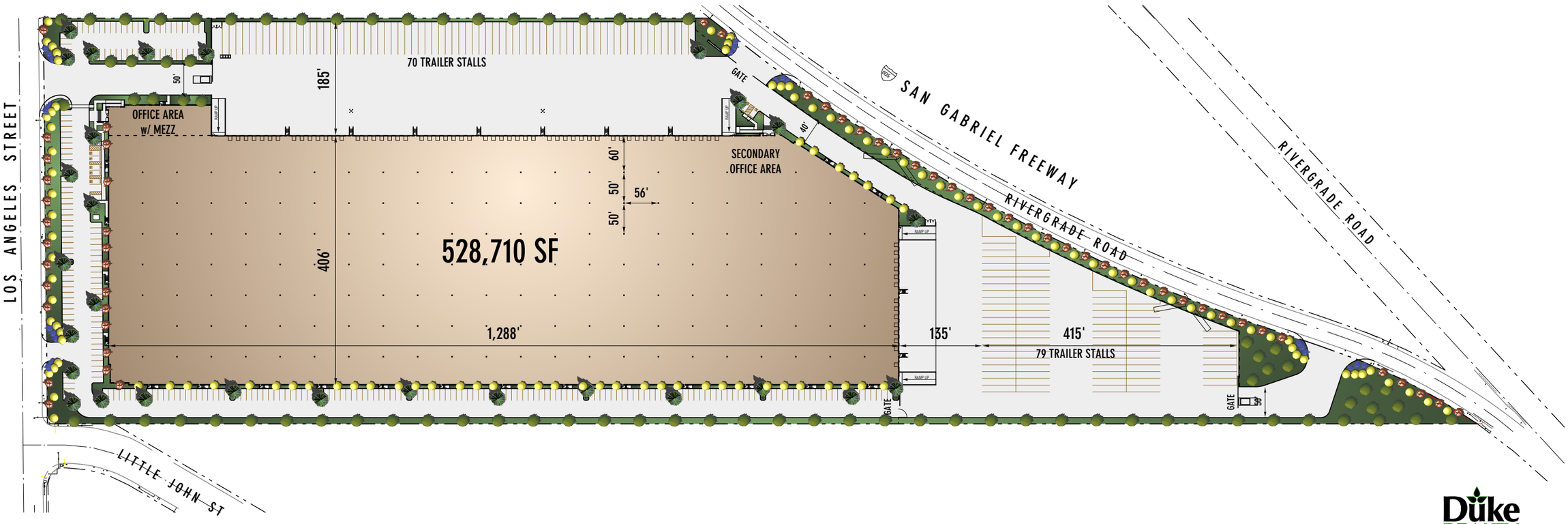
Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Location_Vicinity\Irwindale_Industrial_Spec_Tilt_Up_Project_Location.mxd *0-mapping_guest 7/9/2019*

Map Date: 7/9/2019
Base Source: NAIP 2018

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2. Project Location

2019-030 Irwindale Industrial Spec Tilt-Up Project



SITE PLAN

Duke REALTY

RGA
Office of Architectural Design
15231 Alton Parkway, Suite 100
Irvine, CA 92618
T 949-341-0920
FX 949-341-0922

Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Borders\Irwindale_Industrial_Spec_Tilt_Up_Site_Plan.mxd (AA)-mapping_guest_7/9/2019

Map Date: 7/9/2019
Source: RGA

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3. Site Plan

2019-030 Irwindale Industrial Spec Tilt-Up Project

IRWINDALE

13131 LOS ANGELES STREET INDUSTRIAL PROJECT SCOPING MEETING
AUGUST 26, 2019

NAME	ADDRESS/COMPANY NAME	E-MAIL ADDRESS	PHONE NUMBER
Dena Zepeda	4658 FRAIJO	denazepeda@yahoo	626 6228953
FRED Barbosa	16164 Cabeza Parco		(626) 222-7815
Brandon Jones	5050 Irwindale	bjones@irwindale.ca.gov	
Jake Smith			949-797-7043
MANUEL ORTIZ	CITY OF IRWINDALE	tmeortiz@irwindaleca.gov	626-641-3701
Adam Schmid	Duke Realty	adam.schmid@dukerealty.com	
Robert Diaz	2408 S. MOUNTAIN AVE	-	626 359-5517
Marilyn Simpson	City of Irwindale	msimpson@irwindaleca.gov	626-480-2209
Edwin Arreola	City of Irwindale	earreola@irwindale.gov	
JEFF TYLER	CITY OF IRWINDALE	jtyler@irwindaleca.gov	626-430-2270

CITY OF IRWINDALE SCOPING MEETING – 8/26/2019
13131 LOS ANGELES STREET INDUSTRIAL PROJECT

Please check the boxes below to indicate which of the environmental factors or issues/topics are of concern and should be addressed within the scope of the **13131 Los Angeles Street Industrial Project EIR**. You may provide specific comments for these issues/topics in the space provided below and on the reverse side of this sheet.

☑ Aesthetics	☑ Hazards/Hazardous Materials	☑ Recreation
☑ Agriculture and Forestry Resources	☑ Hydrology/Water Quality	☑ Transportation
☑ Air Quality	☑ Land Use and Planning	☑ Tribal Cultural Resources
☑ Biological Resources	☐ Mineral Resources	☑ Utilities and Service Systems
☑ Cultural Resources	☑ Noise	☐ Wildfire
☑ Energy	☑ Paleontological Resources	☑ Other including Full EIR showing cumulative impacts & economic impact study
☑ Geology and Soils	☑ Population and Housing	
☑ Greenhouse Gas Emissions	☑ Public Services	

*Name (Required): Robert Diaz Phone: [illegible]

*Address (Required): 2408 S. Mountain Ave Irwindale 91010 E-Mail:

***Note: Your name and contact information will become part of the public record for this project.**

☑ Yes, I would like to be added to your project mailing list to receive information on the EIR notice of availability and future public hearings.

Comments:

CITY OF IRWINDALE SCOPING MEETING – 8/26/2019
13131 LOS ANGELES STREET INDUSTRIAL PROJECT

Please check the boxes below to indicate which of the environmental factors or issues/topics are of concern and should be addressed within the scope of the **13131 Los Angeles Street Industrial Project EIR**. You may provide specific comments for these issues/topics in the space provided below and on the reverse side of this sheet.

☐ Aesthetics	☑ Hazards/Hazardous Materials	☐ Recreation
☐ Agriculture and Forestry Resources	☑ Hydrology/Water Quality	☑ Transportation
☑ Air Quality	☑ Land Use and Planning	☐ Tribal Cultural Resources
☑ Biological Resources	☑ Mineral Resources	☑ Utilities and Service Systems
☑ Cultural Resources	☑ Noise	☑ Wildfire
☑ Energy	☐ Paleontological Resources	☑ Other WE should be concerned About All factors And ISSUES
☐ Geology and Soils	☑ Population and Housing	
☑ Greenhouse Gas Emissions	☑ Public Services	

*Name (Required): Dena Zepeda Phone: 626)622 8253

*Address (Required): 4658 Frija Irwindale E-Mail: denazepeda@yahoo.com

***Note: Your name and contact information will become part of the public record for this project.**

☑ Yes, I would like to be added to your project mailing list to receive information on the EIR notice of availability and future public hearings.

Comments:

WE here in Irwindale keep getting clogged all around our residental areas with pollution. Please consider our HEAlth!

City of Irwindale

Environmental Impact Report (EIR) Scoping Meeting

PUBLIC COMMENT CARD

Thank you for your interest in the proposed 13131 Los Angeles Street Industrial Project. Please provide your comments below and submit this card during the public scoping meeting or mail to the address/number listed below by 5:00 p.m. on September 13, 2019 Please attach additional pages, if necessary. Your participation and comments are appreciated.

*Name (Required): Dena Zepeda Phone: 626 622 8953

*Address (Required): 4658 Fraijo Ave E-Mail: dena zepeda@yahoo.com

***Note: Your name and contact information will become part of the public record for this project.**

☒ Yes, I would like to be added to your project mailing list to receive information on the EIR notice of availability and future public hearings.

Please provide your comments below:

Date: 8-26-19

my concerns are our enviroment being polluted and congested with more trucks, traffic, Along with traffic jams. I would hope to see Enviormental Friendly Projects. Would like to know how this will benifit Irwindale Residents.

thank you

Thank you in advance for your comments. Please submit this form by 5:00 p.m. on September 13, 2019 to:

IRWINDALE

City of Irwindale
Community Development Department, Planning Division
ATTN: Marilyn Simpson
5050 North Irwindale Avenue
Irwindale, CA 91706
msimpson@IrwindaleCA.gov

IS-NOP Mailing List

Ron Garcia
City Planner
City of Baldwin Park
14403 East Pacific Avenue
Baldwin Park, CA 91706

Matt Marquez, Director
Economic & Community Development
City of Azusa
213 East Foothill Blvd.
Azusa, CA 91702

Craig Hensley
Planning Division Manager
City of Duarte
1600 Huntington Drive
Duarte, CA 91010

Craig Jimenez
Community Development Director
City of Monrovia
415 South Ivy Avenue
Monrovia, CA 91016

Jeff Anderson
Community Development Director
City of West Covina
1444 West Garvey Avenue
West Covina, CA 91790

Brian Lee
Director of Community Development
City of Covina
125 East College Street
Covina, CA 91723

Jason Kruckeberg
Development Services Director
City of Arcadia
240 West Huntington Drive
Arcadia, CA 91007

Betty Donavanik
Community & Economic Development Director
City of El Monte
11333 Valley Boulevard
El Monte, CA 91731

Jennifer Menjivar-Shaw, Region Manager
Local Public Affairs
Southern California Edison
P.O. Box 800
Rosemead, CA 91770

Congresswoman Judy Chu
1520 Longworth HOB
Washington, DC 20515

Congresswoman Judy Chu
527 South Lake Avenue, Suite 205
Pasadena, CA 91101

Alina Bokde, Deputy Director
Planning and Development Agency
Dept. of Parks & Recreation
1000 South Fremont,
Building A-9 West
Alhambra, CA 91830

Supervisor Hilda Solis
856 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Senator Susan Rubio
100 S. Vincent Ave., Suite 401
West Covina, CA 91790

California Dept. of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

California Air Resources Board
P.O. Box 2815
Sacramento, CA 95814

CalRecycle
Waste Compliance and Mitigation Program LEA
Support Division/Environmental Review
P.O. Box 4025
Sacramento, CA 95814

Los Angeles Regional Water
Quality Control Board
320 W. Fourth Street, Suite 200
Los Angeles, CA 90013

County of Los Angeles
Regional Planning Dept.
San Gabriel Valley Field Office
125 S. Baldwin Avenue
Arcadia, California, 91007

John Norcia, Superintendent
Santa Fe Dam Recreation Area
15501 Arrow Highway
Irwindale, CA 91706

Kevin Regan, Deputy Director
County of Los Angeles
Dept. of Parks and Recreation
265 Cloverleaf Drive
Baldwin Park, CA 91706

Southern California Edison
Third Party Environmental Review
2244 Walnut Grove Ave., Quad 4C 472A
Rosemead, CA 91770

Mike Mohajer
P.O. Box 3334
San Dimas, CA 91773-7334

Assemblywoman Blanca Rubio
State Capitol
P.O. Box 942849
Sacramento, CA 94249-0048

Gerardo Villalobos
County of Los Angeles
Solid Waste Program
5050 Commerce Drive
Baldwin Park, CA 91706

David Hall
403 East Pamela Rd.
Duarte, CA 91010

Duarte Unified School District
1620 Huntington Drive
Duarte, CA 91010

IS-NOP Mailing List

Assemblywoman Cristina Garcia
State Capitol
P.O. Box 942849
Sacramento, CA 94249-0058

Ed Chavez, President
Upper San Gabriel Valley
Municipal Water District
602 E. Huntington Drive, Suite B
Monrovia, CA 91016

Main San Gabriel Basin Watermaster
725 N. Azusa Avenue
Azusa, CA 91702

Robert C. Ferrante
Chief Engineer and General Manager
Los Angeles County Sanitation District
1955 Workman Mill Road
Whittier, CA 90601-1400

Azusa Unified School District
546 South Citrus Ave.
Azusa, CA 9702

Lynda Noriega
Valley County Water District
14521 Ramona Blvd.
Baldwin Park, CA 91706

California Department of Resources Recycling and Recovery
1001 "I" Street
P.O. Box 4025
Sacramento, CA 95812

Adriana Raza
County Sanitation Districts of
Los Angeles County
1955 Workman Mill Road
P.O. Box 4998
Whittier, CA 90607-4998

Rivers and Mountains Conservancy
100 N. Old San Gabriel Canyon Rd.
Azusa, CA 91702

California Dept. of Transportation
District 7
100 South Main Street
Los Angeles, CA 90012

Covina-Valley Unified School District
519 East Badillo Street
Covina, CA 91723

Baldwin Park Unified School District
3699 Holly Avenue
Baldwin Park, CA 91706

Foothill Transit
100 S. Vincent Ave
Suite 200
West Covina, CA 91790

Marco Espinoza
County of Los Angeles
Environmental Hygiene Program
5050 Commerce Drive
Baldwin Park, CA 91706

Senator Anthony J. Portantino
116 E Broadway, Suite 204
Glendale, CA 91205

Julie Yom, AICP
Park Planner
County of Los Angeles
Planning & Development Agency
1000 S. Fremont Ave. Unit #40
Alhambra, CA 91803

Ping Chang
Acting Manager, Compliance
Southern California Association of Governments
Inter-Governmental Review Section
900 Wilshire Boulevard, Suite 1700
Los Angeles, CA 90017

Linda Candelaria
Co-Chairperson
P.O. Box 180
Bonsall, CA 92003

Los Angeles Regional Water Quality Control Board – Region 4
320 W. Fourth St., Suite 200
Los Angeles, CA 90013

State Clearinghouse
Governor's Office of Planning and Research
1400 10th Street, P.O. Box 3044
Sacramento, CA 95812-3044

Charles Alvarez, Councilmember
Gabrielino-Tongva Tribe
23454 Vanowen St.
West Hills, CA 91307

John Guevarra
LAANE
464 Lucas Avenue, Suite 202
Los Angeles, CA 90017

Dianna Watson
Dept. of Transportation, District 7
IGR/CEQA Branch
100 South Main Street
Los Angeles, CA 90012

Robert F. Dorame, Chairman
Gabrielino Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

U.S. Army Corps of Engineers
Los Angeles District
915 Wilshire Blvd.
Los Angeles, CA 90017

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

Sam Dunlap
Cultural Resources Director
Gabrieleno Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

IS-NOP Mailing List

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel
Band of Mission
P.O. Box 693
San Gabriel, CA 91778

Michael Mirelez
Cultural Resource Coordinator
Torres Martinez Desert Cahuilla Indians
P.O. Box 1160
Thermal, CA 92274

Senior Planner
SCAG
Inter-Governmental Review Section
818 West 7th Street, 12th Floor
Los Angeles, CA 90017

California Department of Conservation
801 K Street, MS 24-01
Sacramento, CA 95814

California Department of Fish & Wildlife
South Coast Region 5
3883 Ruffin Road
San Diego, CA 92123

LA County Department of Public Works
200 N. Spring Street, Room 361
Los Angeles, CA 90012-4801

Duke Realty
200 Spectrum Center Drive, Suite 1600
Irvine, CA 92618

South Coast Air Quality Mgmt. District
Susan Nakamura
Assistant Deputy Executive Officer
21865 Copley Drive
Diamond Bar, CA 91765-4178

Assemblymember Ian C. Calderon
13181 Crossroads Pkwy., Suite 160
City of Industry, CA 91746-3497

California Native American
Heritage Commission
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691

Senator Carol Liu
116 E. Broadway, Suite 204
Glendale, CA 91205

CalRecycle
Waste Compliance and Mitigation Program LEA
Support Division/Environmental Review
1011 "I" Street
Sacramento, CA 95814

City of Irwindale
Community Development Department
5050 N. Irwindale Avenue
Irwindale, CA 91706

Rob Swanson
Deputy Attorney General/Environment Section
1300 I Street, 15th Floor
Sacramento, CA 95814

Lauren Ahkiam
LAANE
464 Lucas Avenue, Suite 202
Los Angeles, CA 90017

Sandonne Goad, Chairperson
Gabrielino-Tongva Nation
106 ½ Judge John Aiso St. #231
Los Angeles, CA 90012

Komalpreet Toor
Legal Assistant
Lozeau/Drury LLP
1939 Harrison Street, Suite 150
Oakland, CA 94612

Andrea K. Leisy
Remy Moose Manley, LLP
555 Capitol Mall, Suite 800
Sacramento, CA 95814

California Department of Water Resources
P.O. Box 942836
Sacramento, CA 94236-0001

Los Angeles County Registrar, Recorder, County
Clerk Main Office
12400 Imperial Highway
Norwalk, CA 90650

DEPARTMENT OF TRANSPORTATION
DISTRICT 7 – Office of Regional Planning
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 897-9140
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

September 11, 2019

Ms. Marilyn Simpson
City of Irwindale, Community Development Department
16102 Arrow Highway, Second Floor
Irwindale, CA 91706

RE: 13131 Los Angeles Industrial Street Project – Notice of Preparation (NOP)
SCH # 2019080276
GTS # 07-LA-2018-02773
LA-605/PM: 22.411

Dear Ms. Marilyn Simpson:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above-mentioned Notice of Preparation (NOP). The Proposed Project involves the demolition of the existing on-site buildings and structures for the construction of a ±528,710 square feet stand-alone concrete tilt-up warehouse building. The proposed building would be 47.5 feet tall, with architectural features extending up to 53.5 feet tall. The building would feature forklift ramps and roll-up dock doors on the northern and western sides, respectively. The Proposed Project will include 80 trailer parking spaces on the southeast corner of the site, 70 trailer parking spaces along the western end of the site, and 261 standard vehicle parking spaces around the perimeter of the building. Landscaping and a fire lane will be installed around the perimeter of the building. The Project Proponent is pursuing the Project on a speculative basis, meaning that the proposed building's future tenants are not yet identified.

After reviewing the Notice of Preparation Caltrans has the following comments:

- Please include a Traffic Impact Analysis (TIA) with the proposed Environmental Impact Report (EIR). Due to this project's size, location, and potential impact to State facilities, Caltrans suggests the proposed TIA consider including the following areas of interest:

  - Please provide analysis of the project's impact to the State Highway System and address the added traffic volumes to the on/off-ramps of nearby State Routes. For affected off-ramps, queuing analysis based on Highway Capacity Manual (HCM) queuing methodology is strongly recommended.

- Please consider including a Construction Traffic Management Plan and Truck Haul Route Program for approval by Caltrans. It is recommended this management plan address how the project will minimize congestion on the streets and freeways during the construction period.

• Caltrans recommends that Highway Capacity Manual (HCM) methodology be used when assessing the impact a project may have on the State Highway System. For a traffic impact study of freeway mainline, weave, merge and diverge segments, the methodologies in Chapter 12, 13, and 14 of the Highway Capacity Manual (HCM) 6th edition are limited to under saturated flow conditions. When a freeway facility has oversaturated conditions, Chapter 10 is recommended to be used to determine a more precise density. It is acknowledged that there are limitations of the HCM methodology and it is recommended to use a traffic simulation model for the analysis.

Impacts to off-ramps are considered significant if the traffic generated by the project causes queueing that: (a) exceeds 85% of the off-ramp's storage capacity; or (b) when an auxiliary lane is present, exceeds the lesser of one-half the length of auxiliary lane or 1,000 feet. Additionally, when determining queuing length the analysis should use a local truck factor and 25 feet per passenger car.

When analyzing intersections please consider utilizing Synchro 10. Also, for intersection analysis, instead of using signal timing optimization for matching existing field conditions, please use actual traffic signal timing.

Caltrans is moving towards replacing Level of Service (LOS) with Vehicle Miles Traveled (VMT) when evaluating traffic impact. For any future project we encourage the Lead Agency to integrate transportation and land use in a way that reduces VMT and Greenhouse Gas (GHG) emissions by facilitating the provision of more proximate goods and services to shorten trip lengths and achieve a high level of non-motorized travel and transit use.

As required by SB 743, Caltrans recommends the City of West Hollywood develop a verifiable performance-based Vehicle Miles Travelled (VMT) criteria. This step is critical as the TIR may need to be based on VMT criteria depending on when the study is completed.

Further information included for your consideration;

Greenhouse gas reduction by way of reduced vehicle miles traveled (VMT) is critical. The essential component of walkable communities is mixed-use zoning. Residential and appropriate commercial uses should be intertwined to increase accessibility and allow residents to utilize active transportation modes.

Caltrans encourages the Lead Agency to consider any reduction in vehicle speeds to benefit pedestrian and bicyclist safety, as there is a direct link between impact speeds and the likelihood of fatality or serious injury. These methods include the construction of physically separated facilities such as wide sidewalks, raised medians, refuge islands, and off-road paths and trails, or a reduction in crossing distances through roadway narrowing. These suggestions can reduce pedestrian and bicyclist exposure to vehicles ensuring safety by lessening the time that the user is in the likely path of a motor vehicle.

Signal timing can be adjusted to include Leading Pedestrian Intervals, giving pedestrians a seven second head start. Pedestrian and bicyclist warning signage, flashing beacons, high-visibility continental crosswalks, scramble crossings, flashing yellow turn signals, high-visibility green bike lanes, other signage and buffer striping should be used to indicate to motorists that they should expect to see and yield to pedestrians and bicyclists.

Any development should keep livability in mind by providing shade trees, native landscaping, bioswales, street furniture, bicycle parking, bus shelters and trash cans. Bus bulb-outs can reduce conflict between bicycles and buses on busy roads. Bus only lanes are encouraged to reduce travel times and make public transit more appealing to discretionary users. Any gated communities should provide pedestrian paths and doors to ensure access to transit, shopping centers, schools and main roads. Whenever possible, a grid pattern with short blocks is recommended to promote walking. Permeable paving materials should be incorporated whenever possible.

As a reminder, any transportation of heavy construction equipment and/or materials which requires use of oversized-transport vehicles on State highways will need a Caltrans transportation permit. We recommend large size truck trips be limited to off-peak commute periods.

We look forward to reviewing this project's future Draft EIR and will provide additional comments at that time, if warranted. If you have any questions, please contact Reece Allen, the project coordinator, at reece.allen@dot.ca.gov, and refer to GTS # 07-LA-2018-02773.

Sincerely,

MIYA EDMONSON
IGR/CEQA Branch Chief
cc: Scott Morgan, State Clearinghouse

CALIFORNIA
AIR RESOURCES BOARD

Mary D. Nichols, Chair
Jared Blumenfeld, CalEPA Secretary
Gavin Newsom, Governor

September 12, 2019

Marilyn Simpson
Community Development Manager
Community Development Department
City of Irwindale
16102 Arrow Highway, Second Floor
Irwindale, California 91706

Dear Marilyn Simpson:

Thank you for providing California Air Resources Board (CARB) staff the opportunity to comment on the Notice of Preparation (NOP) for the 13131 Los Angeles Industrial Street Project (Project) Draft Environmental Impact Report (DEIR), State Clearinghouse No. 2019080276. The Project consists of the construction and operation of a standalone concrete tilt-up warehouse building totaling approximately 528,710 square feet within in the City of Irwindale (City), California, which is the lead agency for California Environmental Quality Act (CEQA) purposes.

CARB staff is concerned about the air pollution and health risk impacts that would result should the City approve the Project to build the proposed warehouse building. Freight facilities, such as warehouse and distribution facilities, can result in high daily volumes of heavy-duty diesel truck traffic and operation of onsite equipment (e.g., forklifts and yard tractors) that emit toxic diesel emissions, and contribute to regional air pollution and global climate change.

Existing residences are located east and southeast of the Project site, with the closest residences situated approximately 700 feet from the Project's eastern boundary. In addition to residences, three schools (Walnut Elementary School, Burch Elementary School, and Olive Middle School) are located within one mile of the Project. The communities near the Project are surrounded by existing toxic diesel emission sources, which include existing warehouses and other industrial uses and vehicular traffic along Interstate 605 (I-605). Due to the Project's proximity to residences and schools already disproportionately burdened by multiple sources of pollution, CARB staff is concerned with the potential cumulative health impacts associated with the construction and operation of the Project.

The State of California has placed additional emphasis on protecting local communities from the harmful effects of air pollution through the passage of Assembly Bill 617 (AB 617) (Garcia, Chapter 136, Statutes of 2017). AB 617 is a significant piece of air quality legislation that highlights the need for further emission reductions in communities

with high exposure burdens, like those in which the Project is located. Diesel emissions generated during the construction and operation of the Project would negatively impact the community, which is already disproportionally impacted by air pollution from existing freight facilities.

Through its authority under Health and Safety Code, section 39711, the California Environmental Protection Agency (CalEPA) is charged with the duty to identify disadvantaged communities. CalEPA bases its identification of these communities on geographic, socioeconomic, public health, and environmental hazard criteria (Health and Safety Code, section 39711, subsection (a)). In this capacity, CalEPA currently defines a disadvantaged community, from an environmental hazard and socioeconomic standpoint, as a community that scores within the top 25 percent of the census tracts, as analyzed by the California Communities Environmental Health Screening Tool Version 3.0 (CalEnviroScreen). Communities that score within the top 25 percent of the census tracts are exposed to higher concentrations of air pollutants and have a higher Pollution Burden.[1] CalEnviroScreen uses a screening methodology to help identify California communities currently disproportionately burdened by multiple sources of pollution. According to CalEnviroScreen, communities near the Project score within the top 5 percent of the census tracts. Therefore, CARB urges the City to ensure that the Project does not adversely impact neighboring disadvantaged communities.

The NOP does not state whether the industrial uses proposed under the Project would include cold storage warehouses. The operation of cold storage warehouses would include trucks with transport refrigeration units (TRU) that emit significantly higher levels of toxic diesel emissions, oxides of nitrogen (NO_x), and greenhouse gases than trucks without TRUs. Since it is unclear whether the Project would include cold storage warehouse space, any modeling done in support of the air quality analysis of the DEIR and associated health risk assessment (HRA) should assume that a conservative percentage of the truck and trailer fleet that would be serving the Project site are equipped with TRUs.

In addition to the health risk associated with operations, construction health risks should be included in the air quality section of the DEIR and the Project's HRA. Construction of the Project would result in short-term diesel emissions from the use of both on-road and off-road diesel equipment. The Office of Environmental Health Hazard Assessment's (OEHHA) guidance recommends assessing cancer risks for construction projects lasting longer than two months. Since construction would very likely occur over a period lasting longer than two months, the HRA prepared for the Project should include health risks for existing residences near the Project site during construction.

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1. Pollution Burden represents the potential exposures to pollutants and the adverse environmental conditions caused by pollution.

The HRA prepared in support of the Project should be based on the latest OEHHA guidance (2015 Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments),[2] and the South Coast Air Quality Management District's CEQA Air Quality Handbook.[3] The HRA should evaluate and present the existing baseline (current conditions), future baseline (full build-out year, without the Project), and future year with the Project. The health risks modeled under both the existing and the future baselines should reflect all applicable federal, state, and local rules and regulations. By evaluating health risks using both baselines, the public and city planners will have a complete understanding of the potential health impacts that would result from the Project.

To reduce the exposure of toxic diesel emissions in disadvantaged communities already disproportionally impacted by air pollution, the final design of the Project should include all existing and emerging zero-emission technologies to minimize diesel and NO_x emission exposure to all neighboring communities, as well as the greenhouse gases that contribute to climate change. CARB encourages the City and applicant to implement the measures listed in Attachment A of this comment letter to reduce the Project's construction and operational air pollution emissions.

CARB staff appreciates the opportunity to comment on the NOP for the Project and can provide assistance on zero-emission technologies and emission reduction strategies, as needed. Please include CARB on your State Clearinghouse list of selected State agencies that will receive the DEIR as part of the comment period. If you have questions, please contact Stanley Armstrong, Air Pollution Specialist, at (916) 440-8242 or via email at stanley.armstrong@arb.ca.gov.

Sincerely,

Richard Boyd

Richard Boyd, Chief
Risk Reduction Branch
Transportation and Toxics Division

Attachment

cc: See next page.

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2. Office of Environmental Health Hazard Assessment (OEHHA). Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments. February 2015. Accessed at: https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf

3. SCAQMD's 1993 Handbook can be found at http://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook

cc: State Clearinghouse
P.O. Box 3044
Sacramento, California 95812

Morgan Capilla
NEPA Reviewer
U.S. Environmental Protection Agency
Air Division, Region 9
75 Hawthorne Street
San Francisco, California 94105

Carlo De La Cruz
Sierra Club
714 West Olympic Boulevard, Suite 1000
Los Angeles, California 90015

Lijin Sun
Program Supervisor - CEQA
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, California 91765

Andrea Vidaurre
Center for Community Action and Environmental Justice
P.O. Box 33124
Riverside, California 92519

Stanley Armstrong
Air Pollution Specialist
Exposure Reduction Section
Transportation and Toxics Division

ATTACHMENT A

Recommended Air Pollution Emission Reduction Measures for Warehouses and Distribution Centers

California Air Resources Board (CARB) staff recommends developers and government planners use all existing and emerging zero to near-zero emission technologies during project construction and operation to minimize public exposure to air pollution. Below are some measures, currently recommend by CARB staff, specific to warehouse and distribution center projects. These recommendations are subject to change as new zero-emission technologies become available.

Recommended Construction Measures

1. Ensure the cleanest possible construction practices and equipment are used. This includes eliminating the idling of diesel-powered equipment and providing the necessary infrastructure (e.g., electrical hookups) to support zero and near-zero equipment and tools.

2. Implement, and plan accordingly for, the necessary infrastructure to support the zero and near-zero emission technology vehicles and equipment that will be operating onsite. Necessary infrastructure may include the physical (e.g., needed footprint), energy, and fueling infrastructure for construction equipment, onsite vehicles and equipment, and medium-heavy and heavy-heavy duty trucks.

3. In construction contracts, include language that requires all off-road diesel-powered equipment used during construction to be equipped with Tier 4 or cleaner engines, except for specialized construction equipment in which Tier 4 engines are not available. In place of Tier 4 engines, off-road equipment can incorporate retrofits such that emission reductions achieved equal or exceed that of a Tier 4 engine.

4. In construction contracts, include language that requires all off-road equipment with a power rating below 19 kilowatts (e.g., plate compactors, pressure washers) used during project construction be battery powered.

5. In construction contracts, include language that requires all heavy-duty trucks entering the construction site, during the grading and building construction phases be model year 2014 or later. All heavy-duty haul trucks should also meet CARB's lowest optional low-NO_x standard starting in the year 2022.[1]

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[1] In 2013, CARB adopted optional low-NO_x emission standards for on-road heavy-duty engines. CARB staff encourages engine manufacturers to introduce new technologies to reduce NO_x emissions below the current mandatory on-road heavy-duty diesel engine emission standards for model years 2010 and later. CARB's optional low-NO_x emission standard is available at https://www.arb.ca.gov/msprog/onroad/optionnox/optionnox.htm.

6. In construction contracts, include language that requires all construction equipment and fleets to be in compliance with all current air quality regulations. CARB staff is available to assist in implementing this recommendation.

Recommended Operation Measures

1. Include contractual language in tenant lease agreements that requires tenants to use the cleanest technologies available, and to provide the necessary infrastructure to support zero-emission vehicles and equipment that will be operating onsite.

2. Include contractual language in tenant lease agreements that requires all loading/unloading docks and trailer spaces be equipped with electrical hookups for trucks with transport refrigeration units (TRU) or auxiliary power units. This requirement will substantially decrease the amount of time that a TRU powered by a fossil-fueled internal combustion engine can operate at the project site. Use of zero-emission all-electric plug-in TRUs, hydrogen fuel cell transport refrigeration and cryogenic transport refrigeration are encouraged and can also be included lease agreements.[2]

3. Include contractual language in tenant lease agreements that requires all TRUs entering the project site be plug-in capable.

4. Include contractual language in tenant lease agreements that requires future tenants to exclusively use zero-emission light and medium-duty delivery trucks and vans.

5. Include contractual language in tenant lease agreements requiring all TRUs, trucks, and cars entering the Project site be zero-emission.

6. Include contractual language in tenant lease agreements that requires all service equipment (e.g., yard hostlers, yard equipment, forklifts, and pallet jacks) used within the project site to be zero-emission. This equipment is widely available.

7. Include contractual language in tenant lease agreements that requires all heavy-duty trucks entering or on the project site to be model year 2014 or later today, expedite a transition to zero-emission vehicles, and be fully zero-emission beginning in 2030.

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[2] CARB's Technology Assessment for Transport Refrigerators provides information on the current and projected development of TRUs, including current and anticipated costs. The assessment is available at https://www.arb.ca.gov/msprog/tech/techreport/tru_07292015.pdf.

8. Include contractual language in tenant lease agreements that requires the tenant be in, and monitor compliance with, all current air quality regulations for on-road trucks including CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation,[3] Periodic Smoke Inspection Program (PSIP),[4] and the Statewide Truck and Bus Regulation.[5]

9. Include contractual language in tenant lease agreements restricting trucks and support equipment from idling longer than five minutes while onsite.

10. Include contractual language in tenant lease agreements that limits onsite TRU diesel engine runtime to no longer than 15 minutes. If no cold storage operations are planned, include contractual language and permit conditions that prohibit cold storage operations unless a health risk assessment is conducted and the health impacts fully mitigated.

11. Include rooftop solar panels for each proposed warehouse to the extent feasible, with a capacity that matches the maximum allowed for distributed solar connections to the grid.

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[3] In December 2008, CARB adopted a regulation to reduce greenhouse gas emissions by improving the fuel efficiency of heavy-duty tractors that pull 53-foot or longer box-type trailers. The regulation applies primarily to owners of 53-foot or longer box-type trailers, including both dry-van and refrigerated-van trailers, and owners of the heavy-duty tractors that pull them on California highways. CARB's Heavy-Duty (Tractor-Trailer) Greenhouse Gas Regulation is available at https://www.arb.ca.gov/cc/hdghg/hdghg.htm.

[4] The PSIP program requires that diesel and bus fleet owners conduct annual smoke opacity inspections of their vehicles and repair those with excessive smoke emissions to ensure compliance. CARB's PSIP program is available at https://www.arb.ca.gov/enf/hdvip/hdvip.htm.

[5] The regulation requires newer heavier trucks and buses must meet particulate matter filter requirements beginning January 1, 2012. Lighter and older heavier trucks replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. CARB's Statewide Truck and Bus Regulation is available at https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

NATIVE AMERICAN HERITAGE COMMISSION
Cultural and Environmental Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691 Phone: (916) 373-3710
Email: nahc@nahc.ca.gov
Website: http://www.nahc.ca.gov

CITY OF IRWINDALE
COMMUNITY DEVELOPMENT
SEP 13 2019
RECEIVED

September 10, 2019

Marilyn Simpson
Irwindale, City of
5050 Irwindale Avenue
Irwindale, CA 91706

RE: SCH# 2019080276, 13131 Los Angeles Street Industrial Project, Los Angeles County

Dear Ms. Simpson:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP) for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements**. If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:
    a. A brief description of the project.
    b. The lead agency contact information.
    c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).
    d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).
    a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:
    a. Alternatives to the project.
    b. Recommended mitigation measures.
    c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:
    a. Type of environmental review necessary.
    b. Significance of the tribal cultural resources.
    c. Significance of the project's impacts on tribal cultural resources.
    d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:
    a. Whether the proposed project has a significant impact on an identified tribal cultural resource.
    b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:
   a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or
   b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:
    a. Avoidance and preservation of the resources in place, including, but not limited to:
       i. Planning and construction to avoid the resources and protect the cultural and natural context.
       ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
    b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
       i. Protecting the cultural character and integrity of the resource.
       ii. Protecting the traditional use of the resource.
       iii. Protecting the confidentiality of the resource.
    c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
    d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).
    e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).
    f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:
    a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.
    b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.
    c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
    a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
    b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
    a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
    b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
    c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Staff Services Analyst

cc: State Clearinghouse

SANITATION DISTRICTS OF LOS ANGELES COUNTY

Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager
1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

September 11, 2019

Ref. DOC 5278491

CITY OF IRWINDALE
COMMUNITY DEVELOPMENT

SEP 13 2019

RECEIVED

Ms. Marilyn Simpson
Community Development Manager
City of Irwindale
Community Development Department
16102 Arrow Highway, Second Floor
Irwindale, CA 91706

Dear Ms. Simpson:

NOP Response for 13131 Los Angeles Street Industrial Project

The Sanitation Districts of Los Angeles County (Districts) received a Notice of Preparation of a Draft Environmental Impact Report (NOP) for the subject project on August 19, 2019. The proposed project is located within the jurisdictional boundaries of District No. 15. We offer the following comments regarding sewerage service:

1. The proposed project may require a Districts' permit for Industrial Wastewater Discharge. Project developers should contact the Districts' Industrial Waste Section at (562) 908-4288, extension 2900, in order to reach a determination on this matter. If this permit is necessary, project developers will be required to forward copies of final plans and supporting information for the proposed project to the Districts for review and approval before beginning project construction. For additional Industrial Wastewater Discharge Permit information, go to http://www.lacsd.org/wastewater/industrial_waste/permit.asp.

2. The wastewater flow originating from the proposed project will discharge to a local sewer line, which is not maintained by the Districts, for conveyance to the Districts Baldwin Park Trunk Sewer, located in Harlan Avenue at Ramona Parkway. The Districts' 18-inch diameter trunk sewer has a capacity of 4.3 million gallons per day (mgd) and conveyed a peak flow of 3.2 mgd when last measured in 2013.

3. The wastewater generated by the proposed project will be treated at the San Jose Creek Water Reclamation Plant (WRP) located adjacent to the City of Industry, which has a capacity of 100 mgd and currently processes an average flow of 58.5 mgd. All biosolids and wastewater flows that exceed the capacity of the San Jose Creek WRP are diverted to and treated at the Joint Water Pollution Control Plant in the City of Carson.

4. The expected increase in average wastewater flow from the project, described in the notice as a 528,710 square foot concrete tilt-up building in a M-2 zone, is 99,242 gallons per day, after the structure on the project site is demolished. For a copy of the Districts' average wastewater

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generation factors, go to www.lacsd.org, Wastewater & Sewer Systems, click on Will Serve Program, and click on the Table 1, Loadings for Each Class of Land Use link.

5. The Districts are empowered by the California Health and Safety Code to charge a fee for the privilege of connecting (directly or indirectly) to the Districts' Sewerage System for increasing the strength or quantity of wastewater discharged from connected facilities. This connection fee is a capital facilities fee that is imposed in an amount sufficient to construct an incremental expansion of the Sewerage System to accommodate the proposed project. Payment of a connection fee will be required before this project is permitted to discharge to the Districts' Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, Wastewater & Sewer Systems, and click on Connection Fee, Service Charge and More. In determining the impact to the Sewerage System and applicable connection fees, the Districts will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more specific information regarding the connection fee application procedure and fees, the developer should contact the Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727.

6. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2717.

Very truly yours,

Adriana Raza
Customer Service Specialist
Facilities Planning Department

AR:dc

cc: L. Smith
A. Schmidt
A. Howard

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

SENT VIA USPS AND E-MAIL:
msimpson@IrwindaleCA.gov
Marilyn Simpson, Manager
City of Irwindale, Community Development Department
16102 Arrow Highway, Second Floor
Irwindale CA 91706

September 10, 2019

Notice of Preparation of a Draft Environmental Impact Report for the Proposed 13131 Los Angeles Industrial Street Project[1]

South Coast Air Quality Management District (South Coast AQMD) staff appreciates the opportunity to comment on the above-mentioned document. South Coast AQMD staff's comments are recommendations regarding the analysis of potential air quality impacts from the Proposed Project that should be included in the Draft Environmental Impact Report (EIR). Please send South Coast AQMD a copy of the Draft EIR upon its completion and public release. Note that copies of the Draft EIR that are submitted to the State Clearinghouse are not forwarded to South Coast AQMD. Please forward a copy of the Draft EIR directly to South Coast AQMD at the address shown in the letterhead. **In addition, please send with the Draft EIR all appendices or technical documents related to the air quality, health risk, and greenhouse gas analyses and electronic versions of all air quality modeling and health risk assessment files[2]. These include emission calculation spreadsheets and modeling input and output files (not PDF files). Without all files and supporting documentation, South Coast AQMD staff will be unable to complete our review of the air quality and health risk assessment analyses in a timely manner. Any delays in providing all supporting documentation will require additional time for review beyond the end of the comment period.**

Air Quality Analysis

South Coast AQMD adopted its California Environmental Quality Act (CEQA) Air Quality Handbook in 1993 to assist other public agencies with the preparation of air quality analyses. South Coast AQMD recommends that the Lead Agency use this Handbook as guidance when preparing its air quality analysis. Copies of the Handbook are available from South Coast AQMD's Subscription Services Department by calling (909) 396-3720. More guidance developed since this Handbook is also available on South Coast AQMD's website at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/ceqa-air-quality-handbook-(1993). South Coast AQMD staff also recommends that the Lead Agency use the CalEEMod land use emissions software. This software has recently been updated to incorporate up-to-date state and locally approved emission factors and methodologies for estimating pollutant emissions from typical land use development. CalEEMod is the only software model maintained by the California Air Pollution Control Officers Association (CAPCOA) and replaces the now outdated URBEMIS. This model is available free of charge at: www.caleemod.com.

[1] The Proposed Project would include, among others, construction of a 528,710-square-foot warehouse on 24.9 acres.

[2] Pursuant to the CEQA Guidelines Section 15174, the information contained in an EIR shall include summarized technical data, maps, plot plans, diagrams, and similar relevant information sufficient to permit full assessment of significant environmental impacts by reviewing agencies and members of the public. Placement of highly technical and specialized analysis and data in the body of an EIR should be avoided through inclusion of supporting information and analyses as appendices to the main body of the EIR. Appendices to the EIR may be prepared in volumes separate from the basic EIR document, but shall be readily available for public examination and shall be submitted to all clearinghouses which assist in public review.

South Coast AQMD has also developed both regional and localized significance thresholds. South Coast AQMD staff requests that the Lead Agency quantify criteria pollutant emissions and compare the results to South Coast AQMD's CEQA regional pollutant emissions significance thresholds to determine air quality impacts. South Coast AQMD's CEQA regional pollutant emissions significance thresholds can be found here: http://www.aqmd.gov/docs/default-source/ceqa/handbook/scaqmd-air-quality-significance-thresholds.pdf. In addition to analyzing regional air quality impacts, South Coast AQMD staff recommends calculating localized air quality impacts and comparing the results to localized significance thresholds (LSTs). LSTs can be used in addition to the recommended regional significance thresholds as a second indication of air quality impacts when preparing a CEQA document. Therefore, when preparing the air quality analysis for the Proposed Project, it is recommended that the Lead Agency perform a localized analysis by either using the LSTs developed by South Coast AQMD staff or performing dispersion modeling as necessary. Guidance for performing a localized air quality analysis can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/localized-significance-thresholds.

The Lead Agency should identify any potential adverse air quality impacts that could occur from all phases of the Proposed Project and all air pollutant sources related to the Proposed Project. Air quality impacts from both construction (including demolition, if any) and operations should be calculated. Construction-related air quality impacts typically include, but are not limited to, emissions from the use of heavy-duty equipment from grading, earth-loading/unloading, paving, architectural coatings, off-road mobile sources (e.g., heavy-duty construction equipment) and on-road mobile sources (e.g., construction worker vehicle trips, material transport trips). Operation-related air quality impacts may include, but are not limited to, emissions from stationary sources (e.g., boilers), area sources (e.g., solvents and coatings), and vehicular trips (e.g., on- and off-road tailpipe emissions and entrained dust). Air quality impacts from indirect sources, such as sources that generate or attract vehicular trips, should be included in the analysis.

Operation of the Proposed Project generates or attracts heavy-duty diesel-fueled vehicles. It is recommended that the Lead Agency perform a mobile source health risk assessment. Guidance for performing a mobile source health risk assessment ("*Health Risk Assessment Guidance for Analyzing Cancer Risk from Mobile Source Diesel Idling Emissions for CEQA Air Quality Analysis*") can be found at: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mobile-source-toxics-analysis. An analysis of all toxic air contaminant impacts due to the use of equipment potentially generating such air pollutants should also be included.

In addition, guidance on siting incompatible land uses (such as placing homes near freeways) can be found in the California Air Resources Board's *Air Quality and Land Use Handbook: A Community Health Perspective*, which can be found at: http://www.arb.ca.gov/ch/handbook.pdf. CARB's Land Use Handbook is a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. Guidance[3] on strategies to reduce air pollution exposure near high-volume roadways can be found at: https://www.arb.ca.gov/ch/rd_technical_advisory_final.PDF.

South Coast AQMD staff is concerned about potential public health impacts of siting warehouses within close proximity of sensitive land uses, especially in communities that are already heavily affected by the existing warehouse and truck activities. The South Coast AQMD's Multiple Air Toxics Exposure Study

[3] In April 2017, CARB published a technical advisory, *Strategies to Reduce Air Pollution Exposure Near High-Volume Roadways: Technical Advisory*, to supplement CARB's Air Quality and Land Use Handbook: A Community Health Perspective. This technical advisory is intended to provide information on strategies to reduce exposures to traffic emissions near high-volume roadways to assist land use planning and decision-making in order to protect public health and promote equity and environmental justice. The technical advisory is available at: https://www.arb.ca.gov/ch/landuse.htm.

(MATES IV), completed in May 2015, concluded that the largest contributor to cancer risk from air pollution is diesel particulate matter (DPM) emissions, and that the Los Angeles County within the South Coast Air Basin has the greatest average cancer risk at 415 in one million[4]. Operation of warehouses generates and attracts heavy-duty diesel-fueled trucks that emit DPM. When the health impacts from the Proposed Project are added to those existing impacts, residents living in the communities surrounding the Proposed Project will possibly face an even greater exposure to air pollution and bear a disproportionate burden of increasing health risks. Thus, cumulative impacts from warehouse projects in communities with existing industrial sources should be evaluated and disclosed in the Draft EIR.

Trip Rates for High Cube Warehouse Projects

The Proposed Project will include, among others, construction of a 528,710-square-foot warehouse on 24.9 acres. South Coast AQMD staff recommends the use of truck trip rates from the Institute of Transportation Engineers (ITE) for high cube warehouse projects located in South Coast AQMD (i.e. 1.68 average daily vehicle trips per 1,000 square feet and 0.64 average daily truck trips per 1,000 square feet). Consistent with CEQA Guidelines, the Draft EIR for the Proposed Project may use a non-default trip rate if there is substantial evidence supporting another rate is more appropriate for the air quality analysis.

Mitigation Measures

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires that all feasible mitigation measures that go beyond what is required by law be utilized during project construction and operation to minimize these impacts. Pursuant to CEQA Guidelines Section 15126.4 (a)(1)(D), any impacts resulting from mitigation measures must also be discussed. Several resources are available to assist the Lead Agency with identifying potential mitigation measures for the Proposed Project, including:

- Chapter 11 "Mitigating the Impact of a Project" of South Coast AQMD'S *CEQA Air Quality Handbook*. South Coast AQMD's CEQA web pages available here: http://www.aqmd.gov/home/regulations/ceqa/air-quality-analysis-handbook/mitigation-measures-and-control-efficiencies
- South Coast AQMD's Rule 403 – Fugitive Dust, and the Implementation Handbook for controlling construction-related emissions and Rule 1403 – Asbestos Emissions from Demolition/Renovation Activities
- South Coast AQMD's Mitigation Monitoring and Reporting Plan (MMRP) for the 2016 Air Quality Management Plan (2016 AQMP) available here (starting on page 86): http://www.aqmd.gov/docs/default-source/Agendas/Governing-Board/2017/2017-mar3-035.pdf
- California Air Pollution Control Officers Association (CAPCOA)'s *Quantifying Greenhouse Gas Mitigation Measures* available here: http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf

Additional mitigation measures for operational air quality impacts from mobile sources that the Lead Agency should consider in the Draft EIR may include the following:

- Require zero-emissions or near-zero emission on-road haul trucks such as heavy-duty trucks with natural gas engines that meet the CARB's adopted optional NOx emissions standard at 0.02 grams per brake horsepower-hour (g/bhp-hr), if and when feasible. At a minimum, require that vendors, contractors, and/or haul truck operators commit to using 2010 model year[5] trucks (e.g.,

[4] South Coast AQMD. May 2015. *Multiple Air Toxics Exposure Study in the South Coast Air Basin*. Accessed at: http://www.aqmd.gov/docs/default-source/air-quality/air-toxic-studies/mates-iv/mates-iv-final-draft-report-4-1-15.pdf

[5] The CARB adopted the statewide Truck and Bus Regulation in 2010. The Regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Newer heavier trucks and buses must meet particulate matter filter

material delivery trucks and soil import/export) that meet CARB's 2010 engine emissions standards at 0.01 g/bhp-hr of particulate matter (PM) and 0.20 g/bhp-hr of NOx emissions or newer, cleaner trucks[6]. Include environmental analyses to evaluate, identify, and provide sufficient power and infrastructure available for zero emission trucks and supportive infrastructures in the Energy and Utilities and Service Systems Sections in the CEQA document, where appropriate. The Lead Agency should include the requirement of zero-emission or near-zero emission heavy-duty trucks in applicable bid documents, purchase orders, and contracts. Operators shall maintain records of all trucks associated with project construction to document that each truck used meets these emission standards, and make the records available for inspection. The Lead Agency should conduct regular inspections to the maximum extent feasible to ensure compliance.

- Should the Proposed Project generate significant regional emissions, the Lead Agency should require mitigation that requires accelerated phase-in for non-diesel powered trucks. For example, natural gas trucks, including Class 8 HHD trucks, are commercially available today. Natural gas trucks can provide a substantial reduction in health risks, and may be more financially feasible today due to reduced fuel costs compared to diesel. In the Final CEQA document, the Lead Agency should require a phase-in schedule for these cleaner operating trucks to reduce any significant adverse air quality impacts. South Coast AQMD staff is available to discuss the availability of current and upcoming truck technologies and incentive programs with the Lead Agency.
- Provide electric vehicle (EV) Charging Stations (see the discussion below regarding EV charging stations).
- Trucks that can operate at least partially on electricity have the ability to substantially reduce the significant NOx impacts from this project. Further, trucks that run at least partially on electricity are projected to become available during the life of the project as discussed in the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy (2016-2040 RTP/SCS)[7]. It is important to make this electrical infrastructure available when the project is built so that it is ready when this technology becomes commercially available. The cost of installing electrical charging equipment onsite is significantly cheaper if completed when the project is built compared to retrofitting an existing building. Therefore, South Coast AQMD staff recommends the Lead Agency require the Proposed Project and other plan areas that allow truck parking to be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in. Similar to the City of Los Angeles requirements for all new projects, South Coast AQMD staff recommends that the Lead Agency require at least five percent of all vehicle parking spaces (including for trucks) include EV charging stations[8]. Further, electrical hookups should be provided at the onsite truck stop for truckers to plug in any onboard auxiliary equipment. At a minimum, electrical panels should be appropriately sized to allow for future expanded use.
- Have truck routes clearly marked with trailblazer signs, so that trucks will not enter residential areas.

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requirements beginning January 1, 2012. Lighter and older heavier trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses will need to have 2010 model year engines or equivalent. More information on the CARB's Truck and Bus Regulation is available at: https://www.arb.ca.gov/msprog/onrdiesel/onrdiesel.htm.

[6] Based on a review of the California Air Resources Board's diesel truck regulations, 2010 model year diesel haul trucks should have already been available and can be obtained in a successful manner for the project construction California Air Resources Board. March 2016. Available at: http://www.truckload.org/tca/files/ccLibraryFiles/Filename/000000003422/California-Clean-Truck-and-Trailer-Update.pdf (See slide #23).

[7] Southern California Association of Governments. Accessed at: http://scagrtpscs.net/Pages/FINAL2016RTPSCS.aspx.

[8] City of Los Angeles. Accessed at: http://ladbs.org/LADBSWeb/LADBS_Forms/Publications/LAGreenBuildingCodeOrdinance.pdf.

- Limit the daily number of trucks allowed at the Proposed Project to levels analyzed in the Final CEQA document. If higher daily truck volumes are anticipated to visit the site, the Lead Agency should commit to re-evaluating the Proposed Project through CEQA prior to allowing this land use or higher activity level.
- Design the Proposed Project such that entrances and exits are such that trucks are not traversing past neighbors or other sensitive receptors.
- Design the Proposed Project such that any check-in point for trucks is well inside the Proposed Project site to ensure that there are no trucks queuing outside of the facility.
- Design the Proposed Project to ensure that truck traffic within the Proposed Project site is located away from the property line(s) closest to its residential or sensitive receptor neighbors.
- Restrict overnight parking in residential areas.
- Establish overnight parking within the Proposed Project where trucks can rest overnight.
- Establish area(s) within the Proposed Project site for repair needs.
- Develop, adopt and enforce truck routes both in and out of city, and in and out of facilities.
- Create a buffer zone of at least 300 meters (roughly 1,000 feet), which can be office space, employee parking, greenbelt, etc. between the Proposed Project and sensitive receptors.

Additional mitigation measures for operational air quality impacts from other area sources that the Lead Agency should consider in the Draft EIR may include the following:

- Maximize use of solar energy including solar panels.
- Install the maximum possible number of solar energy arrays on the building roofs and/or on the project site to generate solar energy for the facility and/or EV charging stations.
- Maximize the planting of trees in landscaping and parking lots.
- Use light colored paving and roofing materials.
- Utilize only Energy Star heating, cooling, and lighting devices, and appliances.
- Require use of electric or alternatively fueled sweepers with HEPA filters.
- Use of water-based or low VOC cleaning products that go beyond the requirements of South Coast AQMD Rule 1113.

Alternative

In the event that the Proposed Project generates significant adverse air quality impacts, CEQA requires the consideration and discussion of alternatives to the project or its location which are capable of avoiding or substantially lessening any of the significant effects of the project. The discussion of a reasonable range of potentially feasible alternatives, including a "no project" alternative, is intended to foster informed decision-making and public participation. Pursuant to CEQA Guidelines Section 15126.6(d), the Draft EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the Proposed Project.

Permits and South Coast AQMD Rules

In the event that implementation of the Proposed Project requires a permit from South Coast AQMD, South Coast AQMD should be identified as a Responsible Agency for the Proposed Project. The assumptions in the air quality analysis in the certified Final EIR will be the basis for permit conditions and limits. For more information on permits, please visit South Coast AQMD's webpage at: http://www.aqmd.gov/home/permits. Questions on permits can be directed to South Coast AQMD's Engineering and Permitting staff at (909) 396-3385.

Data Sources

South Coast AQMD rules and relevant air quality reports and data are available by calling South Coast AQMD's Public Information Center at (909) 396-2039. Much of the information available through the Public Information Center is also available at South Coast AQMD's webpage at: http://www.aqmd.gov.

South Coast AQMD staff is available to work with the Lead Agency to ensure that project air quality and health risk impacts are accurately evaluated and mitigated where feasible. If you have any questions regarding this letter, please contact me at lsun@aqmd.gov.

Sincerely,

Lijin Sun

Lijin Sun, J.D.
Program Supervisor, CEQA IGR
Planning, Rule Development & Area Sources

LS
LAC190820-11
Control Number

APPENDIX B

Air Quality and Greenhouse Gas Assessment

Air Quality & Greenhouse Gas Assessment

13131 Los Angeles Street Industrial Project

Irwindale, California

Prepared For:

Community Development Department, Planning Division
5050 North Irwindale Avenue
Irwindale, California

December 2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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Attachment B – Operational Health Risk Assessment - Diesel Particulate Matter
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LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
µg/m3	Micrograms per cubic meter; ppm = parts per million
2016 AQMP	2016 Air Quality Management Plan
2016 RTP/SCS	2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy
AB	Assembly Bill
AERMOD	USEPA air toxic dispersion model
ATCM	Airborne toxics control measure
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CC&Rs	Covenants, Codes, and Restrictions
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon monoxide
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
DOC	Department of Conservation
DPM	Diesel particulate matter
EMFAC	EMission FACtor model
EO	Executive Order
GHG	Greenhouse gas
HRA	Health risk assessment
I-	Interstate
IPCC	Intergovernmental Panel on Climate Change
LOS	Level of service
LSTs	Localized significance threshold
MATES IV	Multiple Air Toxics Exposure Study in the South Coast Air Basin
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NOP	Notice of Preparation
NOx	Nitric oxides
NSR	New Source Review
O_3	Ozone
OEHHA	California Office of Environmental Health Hazard Assessment's
OPR	Office of Planning and Research
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
ppb	Parts per billion
ppm	Parts per million
Project	13131 Los Angeles Street Industrial Project

LIST OF ACRONYMS AND ABBREVIATIONS

RCPG	Regional Comprehensive Plan and Guide
RECLAIM	Regional Clean Air Incentives Market
REL	Reference Exposure Level
Risk Reduction Plan	Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles
ROGs	Reactive organic gases
RTP/SCS	Regional Transportation Plan/Sustainable Communities Strategy
SB	Senate Bill
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
sf	Square-foot
SIP	State Implementation Plan
SJVAPCD	San Joaquin Valley Air Pollution Control District
SO_2	Sulfur dioxide
SoCAB	South Coast Air Basin
SOx	Sulfur oxides
SRA	Source receptor area
SSAB	Salton Sea Air Basin
Strategy	Mobile Source Strategy
TACs	Toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VOCs	Volatile organic compounds

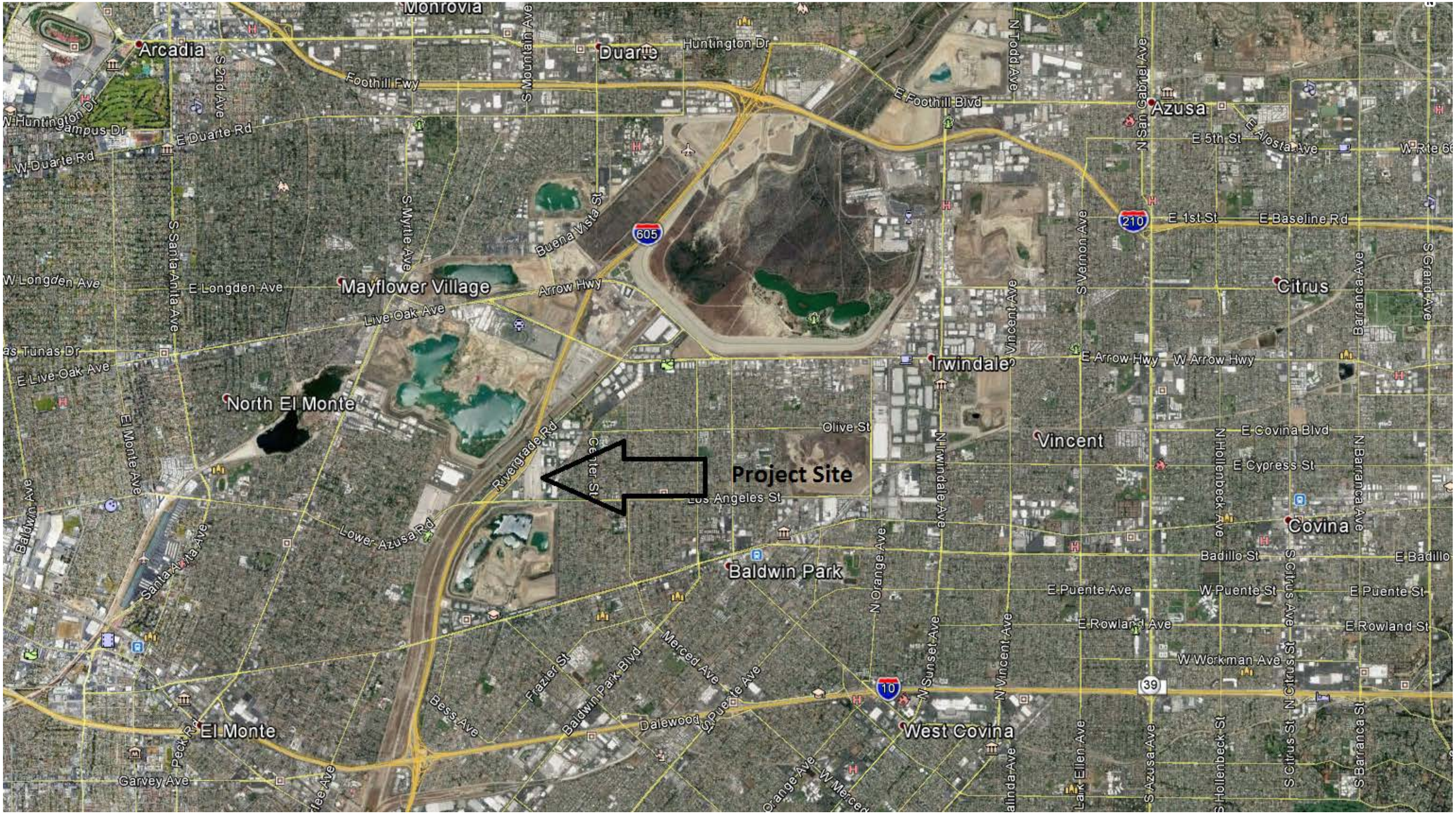
1.0 INTRODUCTION

This report documents the results of a Noise Impact Assessment completed for the 13131 Los Angeles Street Industrial Project (Project), which includes the construction of a standalone concrete tilt-up, 528,710-square-foot (sf) building in Irwindale, California. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations of the South Coast Air Quality Management District (SCAQMD), and in consideration of the Notice of Preparation (NOP) comment letters received from both the SCAQMD and California Air Resources Board (CARB) as presented in Appendix A of the Draft EIR prepared for the Project. Regional and local existing conditions are presented, along with pertinent emissions standards and regulations. The purpose of this assessment is to estimate Project-generated criteria air pollutants and greenhouse gas (GHG) emissions attributable to the Project and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Project site is located in the city of Irwindale, located in central Los Angeles County (see Figure 1). The Project site is an approximate 24.88-acre lot located along Rivergrade Road and Los Angeles Street. The irregular-shaped site is generally bound by Interstate (I-) 605 to the north and west, industrial uses and residences located in the City of Baldwin Park to the east, and Los Angeles Street to the south (see Figure 2. *Project Vicinity*). The Project is proposing a 528,710-sf concrete tilt-up building that will be used for industrial purposes. The site has been previously developed for industrial use and is currently occupied with multiple buildings proposed from demolition.

The Project site is designated by the City of Irwindale General Plan as "Industrial/Business Park". According to the General Plan, the Industrial/Business Park designation allows for office, manufacturing, and warehouse uses, including commercial manufacturing, light manufacturing, and heavy manufacturing.



Map Date: *6/27/2019*
Photo (or Base) Source: *Google Earth*

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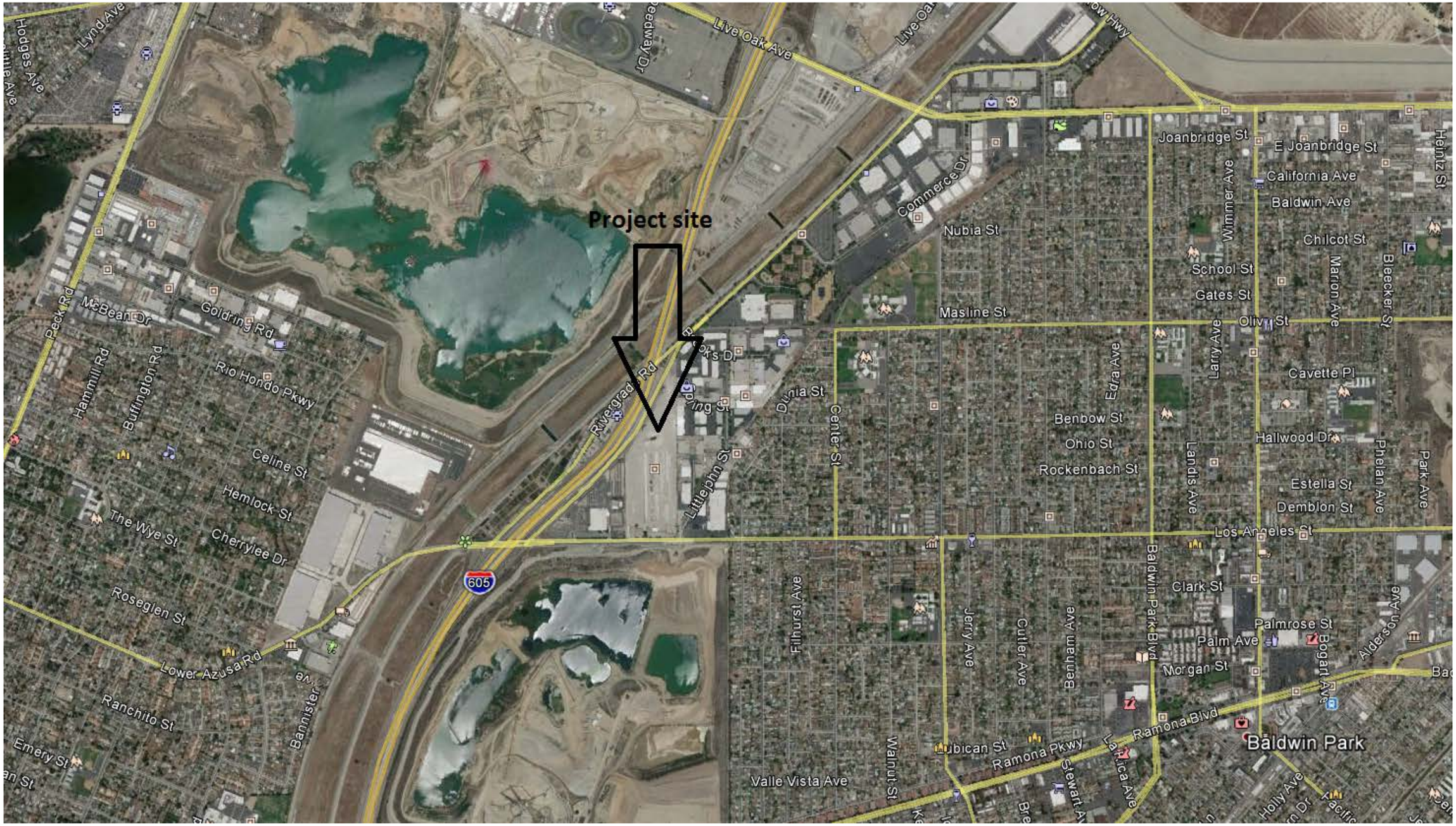
ENVIRONMENTAL CONSULTANTS

Figure 1. Project Vicinity

2019-030



Map Date: *6/27/2019*
Photo (or Base) Source: *Google Earth*

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Figure 2. Project Location

2019-030

2.0 AIR QUALITY

2.1 Air Quality Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the South Coast Air Basin (SoCAB), which encompasses the Project site, pursuant to the regulatory authority of the SCAQMD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project area.

2.1.1 South Coast Air Basin

CARB divides the state into air basins that share similar meteorological and topographical features. Sn Juan Capistrano lies in the SoCAB, which includes the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange County. The air basin is on a coastal plain with connecting broad valleys and low hills and is bounded by the Pacific Ocean on the southwest, with high mountains forming the remainder of the perimeter (SCAQMD 1993).

Temperature and Precipitation

The air basin is part of a semi-permanent high-pressure zone in the eastern Pacific. As a result, the climate is mild, tempered by cool sea breezes. This usually mild weather pattern is interrupted infrequently by periods of extremely hot weather, winter storms, and Santa Ana winds. The annual average temperature varies little throughout the 6,645-square-mile SoCAB, ranging from the low 60s to the high 80s, measured in degrees Fahrenheit (°F). With a more pronounced oceanic influence, coastal areas show less variability in annual minimum and maximum temperatures than inland areas (SCAQMD 1993).

In contrast to a very steady pattern of temperature, rainfall is seasonally and annually highly variable. Almost all annual rains fall between November and April. Summer rainfall is normally restricted to widely scattered thundershowers near the coast, with slightly heavier shower activity in the east and over the mountains.

Humidity

Although the SoCAB has a semiarid climate, the air near the earth's surface is typically moist because of the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the SoCAB by offshore winds, the "ocean effect" is dominant. Periods of heavy fog, especially along the coast, are frequent, and low clouds, often referred to as high fog, are a characteristic climatic feature. Annual average humidity is 70 percent at the coast and 57 percent in the eastern portions of the SoCAB (SCAQMD 1993).

Wind

Wind patterns across the south coastal region are characterized by westerly or southwesterly onshore winds during the day and by easterly or northeasterly breezes at night. Wind speed is higher during the dry summer months than during the rainy winter.

Between periods of wind, air stagnation may occur in both the morning and evening hours. Air stagnation is one of the critical determinants of air quality conditions on any given day. During the winter and fall, surface high-pressure systems over the SoCAB, combined with other meteorological conditions, can result in very strong, downslope Santa Ana winds. These winds normally continue a few days before predominant meteorological conditions are reestablished.

The mountain ranges to the east affect the diffusion of pollutants by inhibiting the eastward transport of pollutants. Air quality in the SoCAB generally ranges from fair to poor and is similar to air quality in most of coastal Southern California. The entire region experiences heavy concentrations of air pollutants during prolonged periods of stable atmospheric conditions (SCAQMD 1993).

Inversions

In conjunction with the two characteristic wind patterns that affect the rate and orientation of horizontal pollutant transport, two similarly distinct types of temperature inversions control the vertical depth through which pollutants are mixed. These inversions are the marine/subsidence inversion and the radiation inversion. The height of the base of the inversion at any given time is known as the "mixing height." The combination of winds and inversions is a critical determinant leading to highly degraded air quality in the summer and generally good air quality in the winter in San Juan Capistrano (SCAQMD 1993).

2.1.2 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O3), coarse particulate matter (PM10), and fine particulate matter (PM2.5) are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO2), and sulfur dioxide (SO2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

Table 2-1. Criteria Air Pollutants- Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

2.1.3 Carbon Monoxide

CO, in the urban environment, is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most sever meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances (i.e., up to 600 feet or 185 meters) of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the SoCAB are in compliance with the state and federal one- and eight-hour standards.

2.1.4 Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NOx). Motor vehicle emissions are the main source of NOx in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in

the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

2.1.5 Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROG and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NOx forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

2.1.6 Particulate Matter

Particulate matter includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of grater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SOx) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and

$PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

2.1.7 Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Diesel engines also contribute to California's $PM_{2.5}$ air quality problems. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

2.1.8 Ambient Air Quality

Ambient air quality at the Project site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout

California. The Azusa (803 North Loren Avenue, Azusa) air quality monitoring station, located approximately six miles northeast of the development site, is the closest station to the site. The Azusa monitoring station monitors ambient concentrations of O_3, $PM_{2.5}$, PM_{10}, the three pollutants in nonattainment of air quality standards in the Project region. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the development area.

Table 2-2 summarizes the published data concerning O_3, $PM_{2.5}$, PM_{10} since 2016 from the Azusa monitoring station for each year that the monitoring data is provided. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region.

Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2016	2017	2018
O_3			
Max 1-hour concentration (ppm)	0.146	0.152	0.139
Max 8-hour concentration (ppm) (state/federal)	0.107 / 0.106	0.114 / 0.114	0.100 / 0.099
Number of days above 1-hour standard (state/federal)	30 / 4	38 / 7	24 / 3
Number of days above 8-hour standard (state/federal)	40 / 36	64 / 62	43 / 42
PM_{10}			
Max 24-hour concentration (µg/m3) (state/federal)	74.6 / 74.0	83.9 / 83.9	78.3 / 78.3
Number of days above 24-hour standard (state/federal)	* / 0	* / 0	59.2 / 0
$PM_{2.5}$			
Max 24-hour concentration (µg/m3) (state/federal)	32.1 / 32.1	24.9 / 24.9	41.8 / 41.8
Number of days above federal 24-hour standard	0	0	0

Source: CARB 2019
µg/m3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

The USEPA and CARB designate air basins or portions of air basins and counties as being in "attainment" or "nonattainment" for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10}, $PM_{2.5}$, and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards (CAAQS) are not to be exceeded during a three-year period. The attainment status for the SoCAB is included in Table 2-3.

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal

standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3, PM_{10}, and $PM_{2.5}$ (CARB 2018a). The Project region is also a nonattainment area for the federal lead standard. This is a result of operations at the Ports of Los Angeles and Long Beach coupled with a few specific industrial processes that occur in the region, such as battery recycling. The Project would not be source of lead.

Table 2-3. Attainment Status of Criteria Pollutants in the South Coast Air Basin

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment
$PM_{2.5}$	Nonattainment	Nonattainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2018a

2.1.9 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

The nearest sensitive receptors to the Project site are residences located approximately 205 meters (670 feet) to the east. In addition to these residences, three schools (Walnut Elementary School, Burch Elementary School, and Olive Middle School) are located within one mile of the Project site.

2.2 Regulatory Framework

2.2.1 Federal

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that CO_2 is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SoCAB for the criteria pollutants.

2.2.2 State

California Clean Air Act

The California Clean Air Act (CCAA) allows the State to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency (CalEPA), is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The federal CAA (and its subsequent amendments) requires each state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The 2016 Air Quality Management Plan (2016 AQMP) is the SIP for the SoCAB. The 2016 AQMP is a regional blueprint for achieving air quality standards and healthful air in the SoCAB and those portions of the Salton Sea Air Basin that are under SCAQMD's jurisdiction. The 2016 AQMP represents a new approach, focusing on available, proven, and cost-effective alternatives to traditional strategies, while seeking to achieve multiple

goals in partnership with other entities promoting reductions in greenhouse gases and toxic risk, as well as efficiencies in energy use, transportation, and goods movement. The most effective way to reduce air pollution impacts is to reduce emissions from mobile sources. The AQMP relies on a regional and multi-level partnership of governmental agencies at the federal, state, regional, and local levels. These agencies (USEPA, CARB, local governments, Southern California Association of Governments [SCAG] and the SCAQMD) are the primary agencies that implement the AQMP programs. The 2016 AQMP incorporates the latest scientific and technical information and planning assumptions, including SCAG's latest Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. The 2016 AQMP includes integrated strategies and measures to meet the NAAQS. The current status of the SIPs for the SoCAB's nonattainment pollutants are shown below:

- On November 28, 2007, CARB submitted a SIP revision to the USEPA for O_3, $PM_{2.5}$ (1997 Standard), CO, and NO_2 in the SoCAB. This revision is identified as the "2007 South Coast SIP". The 2007 South Coast SIP demonstrates attainment of the federal $PM_{2.5}$ standard in the SoCAB by 2014 and attainment of the federal eight-hour O_3 standard by 2023. This SIP also includes a request to reclassify the O_3 attainment designation from "severe" to "extreme". The USEPA approved the redesignation effective June 4, 2010. The "extreme" designation requires the attainment of the eight-hour O_3 standard in the SoCAB by June 2024. CARB approved $PM_{2.5}$ SIP revisions in April 2011 and the O_3 SIP revisions in July 2011. The USEPA approved the $PM_{2.5}$ SIP in 2013 and has approved 46 of the 61 1997 8-hour O_3 SIP requirements (USEPA 2018a). In 2014, the USEPA proposed a finding that the SoCAB has attained the 1997 $PM_{2.5}$ standards. In 2016, the USEPA determined that the SoCAB had attained the 1997 $PM_{2.5}$ standards; however the SoCAB was not redesignated as an attainment area because the USEPA had not approved a maintenance plan and additional requirements under the CAA had not been met (USEPA 2018b).
- In 2012, the SCAQMD adopted the 2012 AQMP, which was a regional and multiagency effort (the SCAQMD, CARB, SCAG, and the USEPA). The primary purposes of the 2012 AQMP were to demonstrate attainment of the federal 24-hour $PM_{2.5}$ standard by 2014 and to update the USEPA-approved 8-hour Ozone Control Plan. In 2012, the 2012 AQMP was submitted to CARB and the USEPA for concurrent review and approval for inclusion in the SIP. The 2012 AQMP was approved by CARB on January 25, 2013.
- In 2017, the SCAQMD adopted the 2016 AQMP. The 2016 AQMP includes strategies and measures to meet the following NAAQS:
    - 2008 8-hour O_3 (75 parts per billion [ppb]) by 2013
    - 2012 Annual $PM_{2.5}$ (12 $\mu g/m^3$) by 2025
    - 1997 8-hour O_3 (80 ppb) by 2023
    - 1979 1-hour O_3 (120 ppb) by 2022
    - 2006 24-hour $PM_{2.5}$ (35 $\mu g/m^3$) by 2019

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Mobile Source Strategy

In 2016 CARB released the update to the Mobile Source Strategy (Strategy). This demonstrates how the state will meet air quality standards, achieve GHG emission reduction targets, decrease health risks from transportation emissions, and reduce petroleum consumption over the next 15 years. This includes engine technology that is effectively 90 percent cleaner than today's current standards, with clean, renewable fuels comprising half the fuels burned.

The strategy also relies on the increased use of renewable fuels to ensure that air pollutant reductions are achieved while meeting the ongoing demand for liquid and gaseous fuels in applications where combustion technologies remain, including in heavy-duty trucks and equipment and light-duty hybrid vehicles. The estimated benefits of the Mobile Source Strategy in reducing emissions from mobile sources includes an 80 percent reduction of O_3-forming emissions (ROG and NOx), and a 45 percent reduction in DPM emissions in the SoCAB from current levels. Statewide, the Strategy would also result in a 45 percent reduction of GHG emissions and a 50 percent reduction in the consumption of petroleum-based fuels.

Governor's Sustainable Freight Action Plan

Under the Governor's Sustainable Freight Action Plan strategy, CARB is working with agency partners and stakeholders to implement a broad program that includes regulations, incentives, and policies designed to support the transformation to a more sustainable freight system and reduce community impacts from freight operations in California. The Governor's Sustainable Freight Action Plan identifies strategies and actions to achieve a sustainable freight transportation system that meets California's environmental, energy, mobility, safety and economic needs. The plan also identifies and initiates corridor-level freight pilot projects within the state's primary trade corridors that integrate advanced technologies, alternative fuels, freight and fuel infrastructure and local economic development opportunities. The plan seeks to

improve the state freight system efficiency 25 percent by "increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030" as well as to deploy over 100,000 zero-emission freight vehicles and equipment and maximizing near-zero equipment and equipment powered by renewable energy by 2030.

Diesel Risk Reduction Plan

The identification of DPM as a TAC in 1998 led CARB to adopt the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles (Risk Reduction Plan) in October 2000. The Risk Reduction Plan's goals include an 85 percent reduction in DPM by 2020 from the 2000 baseline (CARB 2000). The Risk Reduction Plan includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles

In 2008, CARB approved the Truck and Bus Regulation to significantly reduce PM and NO_X emissions from existing diesel vehicles operating in California. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks had to be retrofitted with PM filters beginning January 1, 2012, and older trucks had to be replaced by January 1, 2015. By January1, 2023, nearly all trucks and buses will need to have 2010-model-year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. Small fleets with three or fewer diesel trucks can delay compliance for heavier trucks by reporting and there are a number of extensions for low-mileage construction trucks, early PM filter retrofits, adding cleaner vehicles, and other situations. Privately and publicly owned school buses have different requirements.

Heavy-Duty Vehicle Idling Emission Reduction Program

The purpose of CARB's ATCM *to Limit Diesel-Fueled Commercial Motor Vehicle Idling* is to reduce public exposure to DPM and criteria pollutants by limiting the idling of diesel-fueled commercial vehicles.[1] The driver of any vehicle subject to this ATCM is prohibited from idling the vehicle's primary diesel engine for greater than five minutes at any location and is prohibited from idling a diesel-fueled auxiliary power system for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

CARB Final Regulation Order, *Requirements to Reduce Idling Emissions from New and In-Use Trucks*, beginning in 2008, requires that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of

[1] *The ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling is codified in Title 13 of the* CCR*, Chapter 10, § 2485.*

continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged.

2.2.3 Local

South Coast Air Quality Management District

The SCAQMD is the air pollution control agency for Orange County and the urban portions of Los Angeles, Riverside, and San Bernardino counties, including the Project site. The agency's primary responsibility is ensuring that the FAAQS and CAAQS are attained and maintained in the SoCAB. The SCAQMD is also responsible for adopting and enforcing rules and regulations concerning air pollutant sources, issuing permits for stationary sources of air pollutants, inspecting stationary sources of air pollutants, responding to citizen complaints, monitoring ambient air quality and meteorological conditions, awarding grants to reduce motor vehicle emissions, and conducting public education campaigns, as well as many other activities. All projects are subject to SCAQMD rules and regulations in effect at the time of construction.

The following is a list of noteworthy SCAQMD rules that are required of construction activities associated with the Proposed Project:

- **Rule 201 & Rule 203 (Permit to Construct & Permit to Operate)** – Rule 201 requires a "Permit to Construct" prior to the installation of any equipment "the use of which may cause the issuance of air contaminants . . ." and Regulation II provides the requirements for the application for a Permit to Construct. Rule 203 similarly requires a Permit to Operate.
- **Rule 402 (Nuisance)** – This rule prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. This rule does not apply to odors emanating from agricultural operations necessary for the growing of crops or the raising of fowl or animals.
- **Rule 403 (Fugitive Dust)** – This rule requires fugitive dust sources to implement best available control measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. This rule is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. PM_{10} suppression techniques are summarized below.

    a) Portions of a construction site to remain inactive longer than a period of three months will be seeded and watered until grass cover is grown or otherwise stabilized.
    b) All onsite roads will be paved as soon as feasible or watered periodically or chemically stabilized.
    c) All material transported offsite will be either sufficiently watered or securely covered to prevent excessive amounts of dust.

d) The area disturbed by clearing, grading, earthmoving, or excavation operations will be minimized at all times.

e) Where vehicles leave a construction site and enter adjacent public streets, the streets will be swept daily or washed down at the end of the work day to remove soil tracked onto the paved surface.

- **Rule 1113 (Architectural Coatings)** – This rule requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories.
- **Rule 1401** (**New Source Review of Toxic Air Contaminants**) – This rule requires new source review of any new, relocated, or modified permit units that emit TACs. The rule establishes allowable risks for permit units requiring permits pursuant to Rules 201 and 203 discussed above.
- **Rule 1403 (Asbestos Emissions from Demolition/Renovation Activities**) – This rule specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials. All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings.

Additionally, the SCAQMD has adopted the Air Toxics Control Plan (March 2000, revised March 26, 2004), which is a planning document designed to examine the overall direction of the SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within the SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be reported back to the Board periodically.

The SCAQMD has conducted an in-depth analysis of the TACs and their resulting health risks for all of Southern California. This study, the Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV," shows that cancer risk has decreased more than 50 percent between MATES III (2008a) and MATES IV (2015). MATES IV is the most comprehensive dataset documenting the ambient air toxic levels and health risks associated with the SoCAB emissions. The SCAQMD is currently in the process of developing MATES V. The MATES IV study represents the baseline health risk for a cumulative analysis. MATES IV estimates the average excess cancer risk level from exposure to TACs is less than 400 in one million basin-wide. These model estimates were based on monitoring data collected at 10 fixed sites within the SoCAB. None of the fixed monitoring sites are within the local area of the Project site. However, MATES IV has extrapolated the excess cancer risk levels throughout the basin by modeling the specific grids. MATES IV modeling predicted an excess cancer risk of 427 in one million for the Project area. DPM is included in this cancer risk along with all other TAC sources. DPM accounts for 68 percent of the total risk shown in MATES-IV.

2.3 Air Quality Emissions Impact Assessment

2.3.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.

2) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors).

3) Expose sensitive receptors to substantial pollutant concentrations.

4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

SCAQMD Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (SCAQMD) may be relied upon to make the above determinations. According to the SCAQMD, an air quality impact is considered significant if the Proposed Project would violate any ambient air quality standard, contribute substantially to an existing or projected air quality violation, or expose sensitive receptors to substantial pollutant concentrations. The SCAQMD has established thresholds of significance for air quality for construction and operational activities of land use development projects such as that proposed, as shown in Table 2-4.

Table 2-4. SCAQMD Regional Significance Thresholds – Pounds per Day

Air Pollutant	Construction Activities	Operations
Reactive Organic Gas	75	55
Carbon Monoxide	550	550
Nitrogen Oxide	100	55
Sulfur Oxide	150	150
Coarse Particulate Matter	150	150
Fine Particulate Matter	55	55

Source: SCAQMD 1993 ($PM_{2.5}$ threshold adopted June 1, 2007)

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual

emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable.

Localized Significance Thresholds

In addition to regional significance thresholds, the SCAQMD developed localized significance thresholds (LSTs) for emissions of NO_2, CO, PM_{10}, and $PM_{2.5}$ generated at new development sites (offsite mobile source emissions are not included in the LST analysis protocol). LSTs represent the maximum emissions that can be generated at a Project site without expecting to cause or substantially contribute to an exceedance of the most stringent national or State ambient air quality standards. LSTs are based on the ambient concentrations of that pollutant within the Project source receptor area (SRA), as demarcated by the SCAQMD, and the distance to the nearest sensitive receptor. LST analysis for construction is applicable for all projects that disturb five acres or less on a single day. Irwindale is located within SCAQMD SRA 9 (East San Gabriel Valley). Table 2-5 shows the LSTs for a one-acre, two-acre, and five-acre project site in SRA 9 with sensitive receptors located within 200 meters of the Project site (as previously described, the nearest sensitive receptors are residences located approximately 205 meters [670 feet] east of the Project site).

Table 2-5. Local Significance Thresholds

Project Size	Pollutant (pounds per day Construction/Operations)			
	NO_2	CO	PM_{10}	$PM_{2.5}$
1 Acre	251 / 251	4,803 / 4,803	75 / 19	22 / 6
2 Acres	284 / 284	5,658 / 5,658	84 / 20	26 / 7
5 Acres	368 / 368	7,600 / 7,600	105 / 26	35 / 9

Source: SCAQMD 2009

2.3.2 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by CARB and the SCAQMD, as well as in consideration of the NOP comment letters received from both the SCAQMD and CARB as presented in Appendix A of the Draft EIR prepared for the Project. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project construction-generated air pollutant emissions were primarily calculated using CalEEMod model defaults for Los Angeles County. Operational air pollutant emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA (2019). It is noted that the SCAQMD NOP comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 sf of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is based on an estimate of 557 heavy-duty

truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD.

Additionally, DPM concentration generated from Project haul trucks and the associated dispersion was modeled using the USEPA's AERMOD air toxic dispersion model. AERMOD is a steady-state plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of both surface and elevated sources, and both simple and complex terrain. The resultant concentration values were then used to calculate chronic and carcinogenic health risk using the standardized equations contained in the California Office of Environmental Health Hazard Assessment's (OEHHA) Guidance Manual for Preparation of Health Risk Assessments (2015).

2.3.3 Impact Analysis

Project Construction-Generated Criteria Air Quality Emissions

Regional Construction Significance Analysis

Construction-generated emissions are temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through construction of the Proposed Project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities. Construction activities such as excavation and grading operations, construction vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during construction. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation. Construction activities would be subject to SCAQMD Rule 403, which requires taking reasonable precautions to prevent the emissions of fugitive dust, such as using water or chemicals, where possible, for control of dust during the clearing of land and other construction activities.

Construction-generated emissions associated the Proposed Project were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Attachment A for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily construction-generated emissions for the Proposed Project are summarized in Table 2-6. Construction-generated emissions are short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the SCAQMD's thresholds of significance.

Table 2-6. Construction-Related Emissions (Regional Significance Analysis)

Construction Year	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Construction in 2020	18.56	50.26	48.06	0.10	9.37	5.93
Construction in 2021	18.09	41.15	46.57	0.10	4.22	2.34
SCAQMD Regional Significance Threshold	*75*	*100*	*550*	*150*	*150*	*55*
Exceed SCAQMD Regional Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.

Notes: Emission reduction/credits for construction emissions are applied based on the required implementation of SCAQMD Rule 403. The specific Rule 403 measures applied in CalEEMod include the following: sweeping/cleaning adjacent roadway access areas daily; washing equipment tires before leaving the construction site; water exposed surfaces three times daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied.

Emissions estimates account for the site preparation and grading of 24.88 acres along with the demolition of 62,500 square feet of building space. Building construction, paving, and painting are assumed to occur simultaneously.

As shown in Table 2-6, emissions generated during Project construction would not exceed the SCAQMD's regional thresholds of significance. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard.

Localized Construction Significance Analysis

As noted in CARB's NOP letter concerning the Proposed Project, diesel emissions generated during the construction of the Project could potentially negatively impact the community to the east of the Project site. As previously stated, the nearest sensitive receptors to the Project site are the residences approximately 205 meters (670 feet) east of the Project site. In addition to these residences, three schools (Walnut Elementary School, Burch Elementary School, and Olive Middle School) are located within one mile of the Project site. In order to identify localized, air toxic-related impacts to sensitive receptors, the SCAQMD recommends addressing LSTs for construction. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative (I-4). The SCAQMD provided the *Final Localized Significance Threshold Methodology* (dated June 2003 [revised 2008b]) for guidance. The LST methodology assists lead agencies in analyzing localized impacts associated with Project-specific level proposed projects.

For this Project, the appropriate SRA for the localized significance thresholds is the East San Gabriel Valley source receptor area (SRA 9). LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$. The Proposed Project would disturb ±24.88 acres during construction. As previously described, the SCAQMD has produced lookup tables for projects that disturb less than or equal to five acres daily. The SCAQMD has also issued guidance on applying the CalEEMod emissions software to LSTs for projects greater than five acres. Since CalEEMod calculates construction emissions based on the number of equipment hours and the maximum daily soil disturbance activity possible for each piece of equipment, Table 2-7 is used to determine the maximum daily disturbed-acreage for comparison to LSTs.

Table 2-7. Equipment-Specific Grading Rates

Construction Phase	Equipment Type	Acres Graded/Disturbed per 8-Hour Day	Equipment Quantity	Operating Hours per Day	Acres Graded per Day
Site Preparation	Rubber Tired Dozers	0.5	3	8	1.5
	Tractors/ Loaders/ Backhoes	0.5	4	8	2.0
				Site Preparation Total:	**3.5**
Grading	Excavators	0.0	2	8	0.0
	Rubber Tired Dozer	0.5	1	8	0.5
	Graders	0.5	1	8	0.5
	Scraper	1.0	2	8	2.0
	Tractors/ Loaders/ Backhoes	0.5	2	8	1.0
				Grading Total:	**4.0**
				Maximum Total Acres Graded per Day:	**4.0**

As shown in Table 2-7, Project implementation could potentially disturb up to 3.5 acres daily during the site preparation phase of construction, and 4.0 acres daily during the grading phase of construction. Therefore, the grading phase of construction represents the most potent ground-disturbing construction activities. Thus, the LST threshold value for a 3.5-acre construction site were sourced from the LST lookup tables for site preparation and the LST threshold value for a 4.0-acre construction site were sourced from the LST lookup tables for Project grading activities.

The nearest sensitive receptors to the Project site are the residences in Baldwin Park located approximately 205 meters (670 feet) east of the Project site. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, LSTs for receptors located at 200 meters were utilized in this analysis. The SCAQMD's methodology clearly states that "off-site mobile emissions from a project should not be included in the emissions compared to LSTs." Therefore, for purposes of the construction LST analysis, only emissions included in the CalEEMod "onsite" emissions outputs were considered. Table 2-8 presents the results of localized emissions during the grading phase of construction, which is construction activity that disturbs the most acreage daily. The LSTs reflect a maximum disturbance of 3.5 acres daily during site preparation activities and 4.0 acres daily during grading activities, at 200 meters for the Proposed Project.

Table 2-8. Construction-Related Emissions (Localized Significance Analysis)

Activity	Pollutant (pounds per day)			
	NO_X	CO	PM_{10}	$PM_{2.5}$
Project Site Preparation	42.41	21.51	9.24	5.89
SCAQMD Localized Significance Threshold (3.5 acres of disturbance)	*326.00*	*6,629.00*	*94.50*	*30.50*
Project Site Grading	50.19	31.95	5.55	3.40
SCAQMD Localized Significance Threshold (4.0 acres of disturbance)	*340.00*	*6,952.67*	*98.00*	*32.00*
Exceed SCAQMD Localized Threshold?	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emission reduction/credits for construction emissions are applied based on the required implementation of SCAQMD Rule 403. The specific Rule 403 measures applied in CalEEMod include the following: sweeping/cleaning adjacent roadway access areas daily; washing equipment tires before leaving the construction site; water exposed surfaces three times daily; and limit speeds on unpaved roads to 15 miles per hour. Reductions percentages from the SCAQMD CEQA Handbook (Tables XI-A through XI-E) were applied.
Emissions estimates account for the site prep and grading of 24.88 acres along with the demolition of 62,500 square feet of buildings.

Table 2-8 shows that the emissions of these pollutants on the peak day of construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, significant impacts would not occur concerning LSTs during construction activities. LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative. The SCAQMD Environmental Justice Enhancement Initiative program seeks to ensure that everyone has the right to equal protection from air pollution. The Environmental Justice Program is divided into three categories, with the LST protocol promulgated under Category I: *Further-Reduced Health Risk*. Thus, the fact that onsite Project construction emissions would be generated at rates below the LSTs for NO_x, CO, PM_{10}, and $PM_{2.5}$ demonstrates that the Project would likely not adversely impact the neighboring community to the east.

Project Operations Criteria Air Quality Emissions

Regional Operational Significance Analysis

Implementation of the Project would result in long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as ozone precursors such as ROG and NO_X. Project-generated increases in emissions would be predominantly associated with motor vehicle use. As previously described, operational air pollutant emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA (2019).. As previously described, the SCAQMD NOP comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 sf of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD. Consistent with SCAQMD recommendations, in order to more accurately account for the trip distribution patterns of freight trucks, the average trip length

is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

Long-term operational emissions attributable to the Project are identified in Table 2-9 and compared to the regional operational significance thresholds promulgated by the SCAQMD.

Table 2-9. Operational-Related Emissions (Regional Significance Analysis)

Emission Source	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer Emissions						
Area	11.81	0.00	0.05	0.00	0.00	0.00
Energy	0.28	2.57	2.15	0.01	0.19	0.19
Mobile	23.43	250.71	431.59	2.08	137.06	37.98
Total:	**35.52**	**253.29**	**433.80**	**2.09**	**137.26**	**38.18**
SCAQMD Regional Significance Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed SCAQMD Regional Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**
Winter Emissions						
Area	11.81	0.00	0.05	0.00	0.00	0.00
Energy	0.28	2.57	2.15	0.01	0.19	0.19
Mobile	23.04	259.77	399.87	2.00	137.07	37.98
Total:	**35.14**	**262.34**	**402.09**	**2.02**	**137.26**	**38.18**
SCAQMD Regional Significance Threshold	*55*	*55*	*550*	*150*	*150*	*55*
Exceed SCAQMD Regional Threshold?	**No**	**Yes**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emissions projections account for a trip generation rate and fleet mix identified by KOA 2019.Specifically, KOA estimates the Project generation of 3,459 average vehicle trips daily, 16.2 percent of which would be medium-heavy duty and heavy-heavy duty trucks. The average trip length is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

As shown in Table 2-9, the Project's emissions associated with operations would exceed the SCAQMD significance threshold for NO_x. As previously described, NO_x is a precursor of O_3, a pollutant for which the SoCAB is classified nonattainment.

O_3 is produced when ROG and NO_x undergo photochemical reactions that occur only in the presence of sunlight. O_3 is a very difficult pollutant to regulate due to the time it takes to create and the fact that it can be transported away from its source by wind and meteorological air patterns. People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air

quality standards. Numerous scientific studies have linked ground level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses. O_3 and NO_x have been decreasing in California since 1975 and are projected to continue to decrease in the future. Although vehicle miles traveled across the state continue to increase, NO_x levels are decreasing due to the mandated controls on motor vehicles and the replacement of older polluting vehicles with lower-emitting vehicles. NO_x emissions form electric utilities have also decreased due to the use of cleaner fuels and renewable energy.

SCAQMD's 2016 AQMP, previously described, identifies robust NO_X reductions from new regulations on Regional Clean Air Incentives Market (RECLAIM) facilities, non-refinery flares, commercial cooking, and residential and commercial appliances. Such combustion sources are already heavily regulated with the lowest NO_X emissions levels achievable, yet there are opportunities to require and accelerate replacement with cleaner zero-emission alternatives, such as residential and commercial furnaces, pool heaters, and backup power equipment. The SCAQMD plans to achieve such replacements through a combination of regulations and incentives. Technology-forcing regulations can drive development and commercialization of clean technologies, with future year requirements for new or existing equipment. Incentives can then accelerate deployment and enhance public acceptability of new technologies. The 2016 AQMP also emphasizes that beginning in 2012, continued implementation of previously adopted regulations have been leading to NO_X emission reductions of 68 percent by 2023 and 80 percent by 2031. With the addition of 2016 AQMP regulatory measures, a 30 percent reduction of NO_X from stationary sources is expected in the 15-year period between 2008 and 2023. This is in addition to significant NO_X reductions from stationary sources achieved in the decades prior to 2008.

NO_x is produced as a result of incomplete fossil fuel combustion. The majority of these emissions would be generated by mobile sources, which is an emission source that cannot be regulated by the City of Irwindale. CARB is primarily responsible for controlling pollution from motor vehicles. The air district must adopt rules to achieve and maintain the SAAQS and FAAQS within their jurisdiction. A reduction of vehicle trips to and from the Proposed Project site would reduce the amount of mobile emissions. Methods of reducing vehicle trips include carpooling, transit, cycling, and pedestrian connections. However, this Project is proposing an industrial warehouse and the reduction of vehicle trips is only feasible for the employees working in the facility, though the majority of traffic trips instigated by the Project would be related to haul truck trips transporting freight.

Foothill Transit provides transit service to the City of Irwindale. The use of transit service over passenger automobiles can result in a reduction of daily air pollutants. The nearest bus stops to the Proposed Project are located 0.14 mile to the east at Los Angeles Street and Hornbrook Avenue. Additionally, the implementation element of the Irwindale General Plan Public Transit Review Program evaluates local transit to ensure circulation goals and policies are achieved.

As described in the Regulatory Framework discussion above, the State of California has implemented numerous strategies pertaining to trucks and the reduction of emissions that directly apply to the Project. Urban goods delivery is an essential component of the greater freight system and vital to the urban economy. While urban goods delivery represents a small share of urban traffic, it generates a disproportionate amount of pollution emissions. The State of California promulgates policies designed

and implemented to improve the efficiency and environmental footprint of the urban freight system, including the introduction of zero and near-zero emission vehicles—a strategy embedded in the Governor's Sustainable Freight Action Plan as well as CARB's AB 32 Scoping Plan, SIP, and Mobile Source Strategy.

Additionally, the Project is proposing an industrial warehouse use in close proximity to the I-605, I-10, and I-205, which are major regional freeway corridors. Further, the I-10 corridor has been identified as a "Major International Trade Highway Route" in the California State Goods Movement Action Plan (2007) and therefore serves to accommodate existing truck trips along the interstate. The Goods Movement Action Plan is a statewide initiative to improve and expand California's goods movement industry and infrastructure in a manner which will increase mobility and relieve traffic congestion as well as improve air quality and protect public health. The Plan further identifies I-10 (located 2.2 miles south of the Project site and linked to the Project site by I-605) as a "Priority Corridor" for development toward more efficient goods movement and anticipates that the development of good movement-supporting facilities, such as industrial warehouses like that proposed by the Project, will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related air pollutant emissions and improve air quality.

Both CARB and the SCAQMD have prepared NOP letters concerning the Proposed Project that contain several mitigation measure recommendations to reduce mobile-source criteria air pollutant emissions generated by Project operations. Thus, the following CARB and SCAQMD mitigation is recommended for the Proposed Project:

The following air pollutant reduction measures shall be incorporated during Project operations:

AQ-1: Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the City of Irwindale Community Development Department Manager.

- The proposed warehouse shall be constructed with the appropriate infrastructure to facilitate sufficient electric charging for trucks to plug-in in anticipation of future technology allowing trucks to operate partially on electricity.
- At least five percent of all vehicle parking spaces (including for trucks) shall include EV charging stations. Further, electrical hookups to plug in any onboard auxiliary equipment shall be provided for Project trucks. Electrical panels shall be appropriately sized to allow for future expanded use.
- The majority of all loading/unloading docks and trailer spaces shall be equipped with electrical hookups for trucks with transport refrigeration units or auxiliary power units.
- Legible, durable, weather-proof signs shall be placed at truck access gates, loading docks, and truck parking areas that identify applicable California Air Resources Board

(CARB) anti-idling regulations. At a minimum each sign shall include: 1) instructions for truck drivers to shut off engines when not in use; 2) instructions for drivers of diesel trucks to restrict idling to no more than five minutes; and 3) telephone numbers of the building facilities manager and CARB to report violations.

- Locate any check-in points for trucks well inside the Project site to ensure that there are no trucks queuing outside of the facility.
- Ensure that truck traffic within the Project site is located away from the eastern property line (the property line closest to sensitive receptors) to the maximum extent possible.
- The Project site is 205 meters (673 feet) from the nearest sensitive receptors at the nearest. Establish a buffer zone of at least 300 meters (984 feet) between truck loading zones/docks and the nearest sensitive receptors to the east.
- Restrict overnight parking in the residential communities to the east of the Project and establish overnight parking within the Project site where trucks can be stored overnight.
- All service equipment (i.e., forklifts) used within the site shall be electric or compressed natural gas-powered.
- In order to promote alternative fuels, and help support "clean" truck fleets, the developer/successor-in-interest shall provide building occupants with information related to SCAQMD's Carl Moyer Program, or other such programs that promote truck retrofits or "clean" vehicles and information including, but not limited to, the health effect of diesel particulates, benefits of reduced idling time, CARB regulations, and importance of not parking in residential areas. Tenants shall be notified about the availability of: 1) alternatively fueled cargo handling equipment; 2) grant programs for diesel-fueled vehicle engine retrofit and/or replacement; 3) designated truck parking locations in the project vicinity; 4) access to alternative fueling stations proximate to the site that supply compressed natural gas; and 5) the United States Environmental Protection Agency's SmartWay program.

Despite these efforts set forth above, including imposition of CARB and SCAQMD recommendations contained in mitigation measure **AQ-1**, Project-instigated heavy-duty truck travel would result in SCAQMD daily significance thresholds to be exceeded, which equates to a cumulatively considerable net increase of NO_x (an O_3 precursor) for which the Project region is nonattainment under an applicable federal or state ambient air quality standard. While California state strategies such as the Governor's Sustainable Freight Action Plan, CARB's AB 32 Scoping Plan, and the Mobile Source Strategy will improve the efficiency and environmental footprint of the urban freight system, including the introduction of zero and near-zero emission vehicles, it is not currently feasible to reduce projected Project emissions to levels below the regional significance thresholds.

The SCAQMD has set its CEQA significance thresholds for NO_X at 10 tons per year (expressed as 55 pounds per day) based on the federal CAA, which defines a major stationary source (in extreme ozone nonattainment areas such as the SoCAB) as emitting 10 tons per year. The thresholds correlate with the

trigger levels for the federal New Source Review (NSR) Program and SCAQMD Rule 1303 for new or modified sources. The NSR Program[2] was created by the federal CAA to ensure that stationary sources of air pollution are constructed or modified in a manner that is consistent with attainment of health-based FAAQS. The FAAQS establish the levels of air quality necessary, with an adequate margin of safety, to protect the public health. Therefore, projects that do not exceed the SCAQMD's mass emissions thresholds would not violate any air quality standards or contribute substantially to an existing or projected air quality violation and no criteria pollutant health impacts.

As previously stated, NO_X is a precursor-emissions that forms O_3 in the atmosphere in the presence of sunlight where the pollutants undergo complex chemical reactions. It takes time and the influence of meteorological conditions for these reactions to occur, so O_3 may be formed at a distance downwind from the sources. Breathing ground-level O_3 can result health effects that include reduced lung function, inflammation of airways, throat irritation, pain, burning, or discomfort in the chest when taking a deep breath, chest tightness, wheezing, or shortness of breath. In addition to these effects, evidence from observational studies strongly indicates that higher daily O_3 concentrations are associated with increased asthma attacks, increased hospital admissions, increased daily mortality, and other markers of morbidity. The consistency and coherence of the evidence for effects upon asthmatics suggests that O_3 can make asthma symptoms worse and can increase sensitivity to asthma triggers.

Table 2-9 shows that a large proportion of the Project's NO_X, emissions are from mobile sources. Under California law, the local and regional districts are primarily responsible for controlling air pollution from all sources except motor vehicles. CARB (a branch of the CalEPA) is primarily responsible for controlling pollution from motor vehicles. The air districts must adopt rules to achieve and maintain the SAAQS and FAAQS within their jurisdictions.

On December 24, 2018, the California Supreme Court issued an opinion identifying the need to provide sufficient information connecting a project's air emissions to health impacts or explain why such information could not be ascertained (Sierra Club v. County of Fresno [Friant Ranch, L.P.] [2018] 6 Cal.5th 502, Case No. S219783). As noted above and shown in Table 2-9, the Project's operational emissions would exceed the SCAQMD's NO_X, significance thresholds, resulting in an impact. Pursuant to Rule 8.520(f) of the Rules of the California Court, the SCAQMD and the San Joaquin Valley Air Pollution Control District (SJVAPCD) filed amicus curiae briefs in regard to this case. In both briefs, SCAQMD and SJVAPCD provided technical explanations as to why it may not be feasible for a project to relate the expected adverse air quality impacts to likely health consequences. As summarized below, for the reasons set forth by the SCAQMD and SJVAPCD, the Proposed Project's significant air quality impacts currently cannot feasibly be related to likely health consequences. The technical demands for feasibly and accurately relating the adverse air quality impacts to likely health consequences are too high for this Proposed Project at this time. The technical challenges are listed below, with the SCAQMD and SJVAPCD amicus briefs providing support on the findings for the Proposed Project:

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[2] Code of Federal Regulation (CFR*) [i.e., PSD (40 CFR 52.21, 40* CFR *51.166, 40 CFR 51.165 (b)), Non-attainment NSR (40 CFR 52.24, 40 CFR 51.165, 40 CFR part 51, Appendix S)*

- O_3 is not formed at the location of sources/emissions, which necessitates the use of complex and more sophisticated modeling that is not reasonably feasible for the Proposed Project at this time.

  "For the so-called criteria pollutants, such as O_3, it may be more difficult to quantify health impacts. O_3 is formed in the atmosphere from the chemical reaction of NOx and VOC in the presence of sunlight. It takes time and the influence of meteorological conditions for these reactions to occur, so O_3 may be formed at a distance downwind from the sources." [SCAQMD p.11]

- O_3 and secondary PM formation is complex, which necessitates the use of more sophisticated modeling that is not reasonably feasible for the Project at this time. The Proposed Project, while much smaller in scale to the Friant Ranch project, similarly includes area wide sources and mobile sources.

  "Meteorology, the presence of sunlight, and other complex chemical factors all combine to determine the ultimate concentration and location of O_3 or PM. This is especially true for a project like Friant Ranch where most of the criteria pollutant emissions derive not from a single 'point source,' but from area wide sources (consumer products, paint, etc.) or mobile sources (cars and trucks) driving to, from and around the site." [SJVAPCD p.9]

- The quantity of precursor emissions is not proportional to local O_3 and secondary PM concentration, which necessitates the use of complex and more sophisticated modeling that is not reasonably feasible for the Proposed Project at this time.

  "Ground level O_3 (smog) is not directly emitted into the air but is formed when precursor pollutants such as NO_x and VOCs are emitted into the atmosphere and undergo complex chemical reactions in the process of sunlight. Once formed, O_3 can be transported long distances by wind. Because of the complexity of O_3 formation, a specific tonnage amount of NO_x or VOCs emitted in a particular area does not equate to a particular concentration of O_3 in that area." [SJVAPCD p.4]

  "Secondary PM, like O_3, is formed via complex chemical reactions in the atmosphere between precursor chemicals such as SO_x and NO_x. Because of the complexity of secondary PM formation, the tonnage of PM-forming precursor emissions in an area does not necessarily result in an equivalent concentration of secondary PM in that area." [SJVAPCD p.5]

- Emissions do not cause health effects – it is the resulting concentration of criteria pollutants, which is influenced by sunlight, complex reactions, and transport, which necessitates the use of complex and more sophisticated modeling that is not reasonably feasible for the Proposed Project at this time.

  "The disconnect between the tonnage of precursor pollutants (NOx, SOx and VOCs) and the concentration of O_3 or PM formed is important because it is not necessarily the tonnage of precursor pollutants that causes human health effects, but the concentration of resulting O_3 or PM." [SJVAPCD p.5]

- Currently available modeling tools are appropriate for regional evaluations, but not individual projects like the Proposed Project.

  "For instance, the computer models used to simulate and predict an attainment date for the O_3 or particulate matter NAAQS in the San Joaquin Valley are based on regional inputs, such as regional inventories of precursor pollutants (NOx, SOx and VOCs) and the atmospheric chemistry and meteorology of the Valley… the models simulate future O_3 or PM levels based on predicted changes in precursor emissions Valley wide… The goal of these modeling exercises is not to determine whether the emissions generated by a particular factory or development project will affect the date that the Valley attains the NAAQS. Rather, the Air District's modeling and planning strategy is regional in nature and based on the extent to which all of the emission-generating sources in the Valley (current and future) must be controlled in order to reach attainment." [SJVAPCDF p.6-7]

  "Thus, the CEQA air quality analysis for criteria pollutants is not really a localized, project-level impact analysis but one of regional, "cumulative impacts."" [SJVAPCD p.8]

  "…the currently available modeling tools are equipped to model the impact of all emission sources in the Valley on attainment… Running the photochemical grid model used for predicting O_3 attainment with the emissions solely from the Friant Ranch project (which equate to less than one-tenth of one percent of the total NOx and VOC in the Valley) is not likely to yield valid information given the relative scale involved." [SJVAPCD p.9-10]

- The SJVAPCD indicates that it is currently impossible to accurately correlate project level emissions to specific health impacts.

  "Finally, even once a model is developed to accurately ascertain local increases in concentrations of photochemical pollutants like O_3 and some particulates, it remains impossible, using today's models, to correlate that increase in concentration to a specific health impact. The reason is the same: such models are designed to determine regional, population-wide health impacts, and simply are not accurate when applied at the local level." [SJVAPCD p.10]

- SCAQMD highlights that CARB indicated that a CARB methodology of analysis for $PM_{2.5}$ health impacts is not suited for small projects.

  Also, CARB has developed a methodology that can predict expected mortality (premature deaths) from large amounts of $PM_{2.5}$… SCAQMD used the CARB methodology to predict impacts from three very large power plants (e.g., 731-1,837 pounds/day) Again, this project involved large amounts of additional $PM_{2.5}$ in the District, up to 2.82 tons/day (5,650 pounds/day of $PM_{2.5}$, or 1,029 tons/year… However, the primary author of the CARB methodology has reported that this $PM_{2.5}$ health impact methodology is not suited for small projects and may yield unreliable results due to various uncertainties." "Among these uncertainties are the representativeness of the population used in the methodology, and the specific source of PM and the corresponding health impacts." [SCAQMD p.14]

- SCAQMD indicates that the CARB $PM_{2.5}$ methodology would provide unreliable findings for a small project with a small population and that a lead agency should be able to decide if and when it may be appropriate.

  "Therefore, when SCAQMD prepared a CEQA document for the expansion of an existing oil production facility, with very small $PM_{2.5}$ increases (3.8 pounds/day) and a very small affected population, staff elected not to use the CARB methodology for using estimated $PM_{2.5}$ emissions to derive a projected premature mortality number and explained why it would be inappropriate to do so... SCAQMD staff concluded that use of this methodology for such a small source could result in unreliable findings and would not provide meaningful information" [SCAQMD p.15]

  "This CEQA document was not challenged in court." [SCAQMD p.15]

- The development of new technical approaches in the future may change the feasibility determination.

  "Moreover, what is reasonably feasible may change over time as scientists and regulatory agencies continually seek to improve their ability to predict health impacts. For example, CARB staff has been directed by its Governing Board to reassess and improve the methodology for estimating premature deaths." [SCAQMD p.16]

For the reasons set forth above, it is not currently feasible to relate the Proposed Project's regional NO_x impacts to likely health consequences. The SCAQMD is responsible for assessing air pollutant impacts regionally, and the potential health consequences from those on a regional basis. The current evaluation on the limitations and uncertainties of existing tools is consistent with SCAQMD findings. Currently available regional modeling tools are not designed to capture changes in pollutant concentrations for this Proposed Project that would be meaningful. This is due in part to a relatively course spatial resolution (e.g., greater than 4 x 4 kilometers) which makes it speculative to discern regional Project impacts on air quality.

Localized Operational Significance Analysis

According to the SCAQMD localized significance threshold methodology, LSTs would apply to the operational phase of a proposed project only if the project includes stationary sources or attracts mobile sources that may spend long periods queuing and idling at the site (e.g., warehouse or transfer facilities). The Proposed Project includes one 528,710-sf warehouse. Therefore, in the case of the Proposed Project, the operational phase LST protocol is applied. Operational LSTs apply to CO, NO_2, PM_{10}, and $PM_{2.5}$.

The nearest sensitive receptors to the Project site are single-family residences located to the east of the site. The nearest residence is approximately 0.13 mile (670 feet/205 meters) distant. LST thresholds are provided for distances to sensitive receptors of 25, 50, 100, 200, and 500 meters. Therefore, operational LSTs for receptors located at 200 meters were utilized in this analysis.

The appropriate SRA for the localized significance thresholds is the East San Gabriel Valley area (SRA 9) since this area includes the Project site. As described, the SCAQMD has produced lookup tables for projects that disturb one, two and five acres. While the Proposed Project site is ±24.88 acres, the LST

threshold value for a five-acre site was employed from the LST lookup tables. This is conservative since the analysis will only account for the dispersion of air pollutants over five acres before reaching sensitive receptors, as opposed to accounting for the dispersion of air pollutants over a greater 24.88-acre area.

For a worst-case scenario assessment, the emissions shown in Table 2-10 include all "onsite" project-related stationary (area) sources and 10 percent of the Project-related mobile sources. Considering that the longest weighted trip length used in CalEEMod for the Project is approximately 49.8 miles, 10 percent of this total would represent an onsite travel distance for each car and truck of approximately 2.49 miles; thus, the 10 percent assumption is conservative and would tend to overstate the actual impact.

Table 2-10. Operational-Related Emissions Attributable to Project Buildout (Localized Significance Analysis)

Source	Pollutant (pounds per day)			
	NO_2	CO	PM_{10}	$PM_{2.5}$
Onsite Emissions (Summer)	25.97	40.03	13.72	3.81
Onsite Emissions (Winter)	25.32	43.38	13.72	3.81
SCAQMD Localized Significance Threshold	*368.00*	*7,600.00*	*26.00*	*9.00*
Exceed SCAQMD Localized Significance Threshold?	No	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.

Notes: Emissions projections account for a trip generation rate and fleet mix identified by KOA 2019.Specifically, KOA estimates the Project generation of 3,459 average vehicle trips daily, 16.2 percent of which would be medium-heavy duty and heavy-heavy duty trucks. . The average trip length is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

As seen in Table 2-10, the emissions of these pollutants on the peak day of operations would not result in significant concentrations of pollutants at nearby sensitive receptors. Therefore, significant impacts would not occur concerning LSTs during operational activities.

Conflict with the 2016 Air Quality Management Plan

As part of its enforcement responsibilities, the USEPA requires each state with nonattainment areas to prepare and submit a SIP that demonstrates the means to attain the federal standards. The SIP must integrate federal, state, and local plan components and regulations to identify specific measures to reduce pollution in nonattainment areas, using a combination of performance standards and market-based programs. Similarly, under state law, the CCAA requires an air quality attainment plan to be prepared for areas designated as nonattainment with regard to the FAAQS and SAAQS. Air quality attainment plans outline emissions limits and control measures to achieve and maintain these standards by the earliest practical date.

As previously mentioned, the Project site is located within the SoCAB, which is under the jurisdiction of the SCAQMD. The SCAQMD is required, pursuant to the federal CAA, to reduce emissions of criteria pollutants for which the SoCAB is in nonattainment. In order to reduce such emissions, the SCAQMD drafted the 2016 AQMP. The 2016 AQMP establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving state (California) and national air quality standards. The

2016 AQMP is a regional and multi-agency effort including the SCAQMD, CARB, SCAG, and the USEPA. The plan's pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including SCAG's 2016 RTP/SCS, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts. (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.) The Project is subject to the SCAQMD's AQMP.

According to the SCAQMD, in order to determine consistency with SCAQMD's air quality planning two main criteria must be addressed.

Criterion 1:

With respect to the first criterion, SCAQMD methodologies require that an air quality analysis for a project include forecasts of project emissions in relation to contributing to air quality violations and delay of attainment.

a) *Would the project result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new air quality violations?*

As shown in Table 2-9, the Proposed Project would result in emissions exceeding the SCAQMD regional NO_X threshold during operations. As previously discussed, the predominate source of NO_x emissions would be due to mobile sources, mainly that of heavy-duty trucks. Mobile emission cannot be regulated by the City. Therefore, the Proposed Project would have the potential to cause or affect a violation of the ambient air quality standards.

b) *Would the project delay timely attainment of air quality standards or the interim emissions reductions specified in the AQMP?*

The Project would result in NO_x emissions beyond the SCAQMD regional significance threshold during operations, it could potentially delay the timely attainment of air quality standards and/or AQMP emission reduction.

The Project would not be consistent with Criterion 1.

Criterion 2:

With respect to the second criterion for determining consistency with SCAQMD and SCAG air quality policies, it is important to recognize that air quality planning within the SoCAB focuses on attainment of ambient air quality standards at the earliest feasible date. Projections for achieving air quality goals are based on assumptions regarding population, housing, and growth trends. Thus, the SCAQMD's second criterion for determining Project consistency focuses on whether or not the Proposed Project exceeds the assumptions utilized in preparing the forecasts presented its air quality planning documents. Determining whether or not a project exceeds the assumptions reflected in the 2016 AQMP involves the evaluation of the three criteria outlined below. The following discussion provides an analysis of each of these criteria.

a) *Would the project be consistent with the population, housing, and employment growth projections utilized in the preparation of the 2016 AQMP?*

A project is consistent with regional air quality planning efforts in part if it is consistent with the population, housing, and employment assumptions that were used in the development of the SCAQMD air quality plans. Generally, three sources of data form the basis for the projections of air pollutant emissions in Irwindale. Specifically, SCAG's *Growth Management* Chapter of the Regional Comprehensive Plan and Guide (RCPG) provides regional population forecasts for the region and SCAG's *2016 RTP/SCS* provides socioeconomic forecast projections of regional population growth. The City of Irwindale General Plan is referenced by SCAG in order to assist forecasting future growth in Irwindale.

The Proposed Project is consistent with the land use designation and development density presented in the City of Irwindale General Plan. As previously stated, the Project site is designated by the City of Irwindale General Plan as "Industrial/Business Park", which allows for office, manufacturing, and warehouse uses, including commercial manufacturing, light manufacturing and heavy manufacturing. Furthermore, the Project does not involve any uses that would increase population beyond what is considered in the General Plan and, therefore, would not affect city-wide plans for population growth at the Project site. Thus, the Proposed Project is consistent with the types, intensity, and patterns of land use envisioned for the site vicinity in the General Plan and RCPG. As a result, the Project would not conflict with the land use assumptions or exceed the population or job growth projections used by SCAQMD to develop the 2016 AQMP. The City of Irwindale's population, housing, and employment forecasts, which are adopted by SCAG's Regional Council, are based on the local plans and policies applicable to the City; and these are used by SCAG in all phases of implementation and review. Additionally, as the SCAQMD has incorporated these same projections into their air quality planning efforts, it can be concluded that the Proposed Project would be consistent with the projections. (SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans.) Therefore, the Proposed Project would be considered consistent with the population, housing, and employment growth projections utilized in the preparation of SCAQMD's air quality plans.

b) Would the project implement all feasible air quality mitigation measures?

In order to further reduce emissions, the Project would be required to comply with emission reduction measures promulgated by the SCAQMD, such as SCAQMD Rules 402, 403, 1113, and 1403. SCAQMD Rule 402 prohibits the discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. SCAQMD Rule 403 requires fugitive dust sources to implement Best Available Control Measures for all sources, and all forms of visible particulate matter are prohibited from crossing any property line. SCAQMD Rule 403 is intended to reduce PM_{10} emissions from any transportation, handling, construction, or storage activity that has the potential to generate fugitive dust. SCAQMD 1113 requires manufacturers, distributors, and end-users of architectural and industrial maintenance coatings to reduce ROG emissions from the use of these coatings, primarily by placing limits on the ROG content of various coating categories. Rule 1403 specifies work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials. All operators are required to maintain records, including waste shipment records, and are required to use

appropriate warning labels, signs, and markings. As such, the Proposed Project meets this consistency criterion.

c) Would the project be consistent with the land use planning strategies set forth by SCAQMD air quality planning efforts?

The AQMP contains air pollutant reduction strategies based on SCAG's latest growth forecasts, and SCAG's growth forecasts were defined in consultation with local governments and with reference to local general plans. The Proposed Project is consistent with the land use designation and development density presented in the City of Irwindale's General Plan and therefore would not exceed the population or job growth projections used by the SCAQMD to develop the AQMP.

In conclusion, the determination of AQMP consistency is primarily concerned with the long-term influence of a project on air quality. While the Project would be consistent with Criterion 2, resultant operational emissions would exceed regional significance thresholds potentially hindering the region's ability to meet state and federal air quality standards, thereby conflicting with Criterion 1. Thus, the Project would conflict with the SCAQMD 2016 AQMP.

Exposure of Sensitive Receptors to Toxic Air Contaminants

Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis.

Construction-Generated Air Contaminants

Construction-related activities would result in temporary, short-term Project-generated emissions of DPM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., clearing, grading); soil hauling truck traffic; paving; application of architectural coatings; and other miscellaneous activities. For construction activity, DPM is the primary TAC of concern. Particulate exhaust emissions from diesel-fueled engines (i.e., DPM) were identified as a TAC by the CARB in 1998. The potential cancer risk from the inhalation of DPM, as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs. Accordingly, DPM is the focus of this discussion.

Based on the emission modeling conducted the maximum construction-related annual emissions of $PM_{2.5}$ exhaust, considered a surrogate for DPM, would be 2.02 pounds per day during 2020 construction activities and 1.65 during 2021 construction activities (see Attachment A). $PM_{2.5}$ is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter (i.e., $PM_{2.5}$), according to CARB. Most $PM_{2.5}$ derives from combustion, such as use of gasoline and diesel fuels by motor vehicles.) Furthermore, even during the most intense month of construction, emissions of DPM would be generated from different

locations on the Project site, rather than a single location, because different types of construction activities (e.g., demolition, site preparation, building construction) would not occur at the same place at the same time.

The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to the OEHHA, health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-, 30-, or nine-year exposure period; further, such assessments should be limited to the period/duration of activities associated with the Proposed Project. Consequently, an important consideration is the fact that construction of the Proposed Project is not anticipated to last nine consecutive years, the minimum duration of exposure from which to calculate health risk (Project construction is anticipated to last two years), and that on a day-to-day basis, construction activity generally spans eight hours as opposed to throughout the entire day.

Therefore, considering the relatively low mass of DPM emissions that would be generated during even the most intense season of construction, the fact that construction would not last as long as the minimum duration of exposure from which to calculate health risk, and the relatively short duration that construction activities (less than two years) would occur, construction-related TAC emissions would not expose sensitive receptors to substantial amounts of air toxics.

Furthermore, the Project has been evaluated against the SCAQMD's LSTs for construction. As previously stated, LSTs were developed in response to SCAQMD Governing Boards' Environmental Justice Enhancement Initiative and can be used to assist lead agencies in analyzing localized impacts associated with Project-specific level of proposed projects. The SCAQMD Environmental Justice Enhancement Initiative program seeks to ensure that everyone has the right to equal protection from air pollution. The Environmental Justice Program is divided into three categories, with the LST protocol promulgated under Category I: *Further-Reduced Health Risk*. As shown in Table 2-8, the emissions of pollutants on the peak day of construction would not result in significant concentrations of pollutants at nearby sensitive receptors. Thus, the fact that onsite Project construction emissions would be generated at rates below the LSTs for NO_x, CO, PM_{10}, and $PM_{2.5}$ demonstrates that the Project would likely not adversely impact the neighboring community to the east.

Operational Air Contaminants

Operation of the Proposed Project would result in the development of substantial sources of air toxins. The Project includes a warehouse facility that would that would be utilized by heavy- and medium-duty trucks. DPM from trucks idling and accessing the site would be a major source of operational air contaminants. An HRA has been prepared for this Project (see Attachment B). The following discussion is based on this HRA.

Project Health Risk Assessment

CARB identified DPM as a TAC in 1998. Mobile sources (including trucks, buses, automobiles, trains, ships, and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Diesel exhaust is composed of two phases, either gas or particulate – both contribute to the risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particulate phase has many different types that can be classified by size or composition. The sizes of diesel particulates of greatest health concern are fine and ultrafine particles. These particles may be composed of elemental carbon with adsorbed[3] compounds such as organics, sulfates, nitrates, metals, and other trace elements. Diesel exhaust is emitted from a broad range of on- and off-road diesel engines. As the Project would accommodate daily visits from heavy-duty diesel trucks during operations, an analysis of DPM was performed using the USEPA-approved AERMOD model.

Non-Carcinogenic Hazards

The significance thresholds for TAC exposure requires an evaluation of non-cancer risk stated in terms of a hazard index. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the Reference Exposure Level (REL) for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts.

An acute or chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the acute or chronic exposure by the reference exposure level. The highest maximum chronic and acute hazard index at a sensitive receptor associated with DPM emissions from the Project would be 0.0013 and 0.0347, respectively. This concentration would occur at the residential neighborhood located east of the Project site, specifically at the western cul-de-sac of Benbow Street. Therefore, non-carcinogenic hazards are calculated to be within acceptable limits.

Carcinogenic Risk

Vehicle DPM emissions were estimated using emission factors for course particulate matter less than 10 microns in diameter (PM_{10}) generated with the 2017 version of the EMission FACtor model (EMFAC) developed by CARB. EMFAC 2017 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources. The most recent version of this model, EMFAC 2017, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled by speed, and number of starts per day. The most important improvement in EMFAC 2017 is the integration of the new data and methods to estimate

[3]This term is specifically used for gases.

emissions from diesel trucks and buses. The model includes the emissions benefits of the truck and bus rule and the previously adopted rules for other on-road diesel equipment.

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2017 for vehicles in the SoCAB within Los Angeles County. EMFAC generates emission factors in terms of grams of pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of vehicle speed, temperature, and relative humidity. The model was run for speeds traveled on and within the vicinity of the Project site. The vehicle travel speeds for each segment modeled are summarized below.

- Idling (15 minutes per truck) – onsite loading/unloading; and
- five miles per hour – onsite vehicle movement including driving and maneuvering; and
- 35 miles per hour – offsite vehicle movement including driving and maneuvering.

The average PM_{10} emission factors for heavy trucks were calculated based on the annual average emission factors for various exposure periods associated with assumptions for evaluating exposure over three different periods (i.e., 70-, 30-, and nine-year exposure scenarios). The posted speed limit on Los Angeles Street is 40 miles per hour. The average PM_{10} emission factor for heavy trucks traveling 35 miles per hour is greater than those traveling 40 miles per hour. Thus, the use of an emissions factor for trucks traveling 35 miles per hour is conservative.

Based on the AERMOD outputs, the expected annual average diesel PM_{10} emission concentrations at the most exposed sensitive receptor (located at the western cul-de-sac of Benbow Street) resulting from operation of the Project (557 daily heavy-duty truck trips) would be 0.007 $\mu g/m^3$ at the greatest.

Cancer risk calculations for residences are based on 70-, 30-, and nine-year exposure periods while schools are based on a nine-year exposure period. The calculated carcinogenic risk at the sensitive receptor as a result of the Project is depicted in Table 2-11.

Table 2-11. Maximum Operational Health Risk at the Project Vicinity Residential Neighborhoods

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds SCAQMD Significance Threshold?
Residences to the East with Highest Pollutant Concentrations			
70-Year Exposure	3.24	*10*	**No**
30-Year Exposure	2.73	*10*	**No**
9-Year Exposure	1.96	*10*	**No**
Walnut Elementary School to the Northeast			
9-Year Exposure	1.02	*10*	**No**

Source: Refer to Attachment B for Model Data Outputs.
Notes: The elementary school is only analyzed for nine years of exposure as students are not expected to attend school beyond those years.

In conclusion, non-carcinogenic hazards resulting from the Proposed Project are calculated to be within acceptable limits. Additionally, impacts related to cancer risk from heavy trucks would be less than significant at the nearest residences and nearest school. Therefore, impacts related to health risk from the Project would be less than significant.

Naturally Occurring Asbestos

Another potential air quality issue associated with construction-related activities is the airborne entrainment of asbestos due to the disturbance of naturally-occurring asbestos-containing soils. The Proposed Project is not located within an area designated by the State of California as likely to contain naturally-occurring asbestos (Department of Conservation [DOC] 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos.

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots," are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the CO standard in California is a maximum of 3.4 grams per mile for passenger cars (requirements for certain vehicles are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities, CO concentrations in the Project vicinity have steadily declined.

Accordingly, with the steadily decreasing CO emissions from vehicles, even very busy intersections do not result in exceedances of the CO standard. The analysis prepared for CO attainment in the SCAQMD's *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County can be used to demonstrate the potential for CO exceedances. The SCAQMD CO hot spot analysis was conducted for four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. The Los Angeles County Metropolitan Transportation Authority evaluated the level of service (LOS) in the vicinity of the Wilshire Boulevard/Veteran Avenue intersection and found it to be LOS E at peak morning traffic and LOS F at peak afternoon traffic (LOS E and F are the two least efficient traffic LOS ratings). Even with the inefficient LOS and volume of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992).

According to the Traffic Study prepared for the Project (KOA 2019), the Project is anticipated to generate 3,459 daily trips on average. Because the Proposed Project would not increase traffic volumes at any intersection to more than 100,000 vehicles per day, there is no likelihood of the Project traffic exceeding CO values.

Odors

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

According to the SCAQMD, land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any uses identified by the SCAQMD as being associated with odors.

Cumulative Air Quality Impacts

The cumulative setting for air quality includes the City of Irwindale and the SoCAB. The SoCAB is designated as a nonattainment area for state standards of O_3, PM_{10}, and $PM_{2.5}$. The region is also designated as a nonattainment area for federal standards of O_3 and $PM_{2.5}$ (CARB 2018a). Cumulative growth in population, vehicle use, and industrial activity could inhibit efforts to improve regional air quality and attain the ambient air quality standards. Thus, the setting for this cumulative analysis consists of the SoCAB and associated growth and development anticipated in the air basin.

The SCAQMD's approach to assessing cumulative impacts is based on the AQMP forecasts of attainment of ambient air quality standards in accordance with the requirements of the federal and CCAAs. As discussed earlier, the Proposed Project would potentially conflict with the 2016 AQMP, which is intended to bring the SoCAB into attainment for all criteria pollutants, since projected daily emissions of NO_x would exceed SCAQMD regional thresholds. On December 12, 2008 the CARB adopted Resolution 08-43, which limits NO_x, PM_{10} and $PM_{2.5}$ emissions from on-road diesel truck fleets that operate in California. On October 12, 2009 Executive Order (EO) R-09-010 was adopted that codified Resolution 08- 43 into Section 2025, title 13 of the California Code of Regulations (CCR). This regulation requires that by the year 2023 all commercial diesel trucks that operate in California shall meet model year 2010 (Tier 4) or latter emission standards. In the interim period, this regulation provides annual interim targets for fleet owners to meet. This regulation also provides a few exemptions including a onetime per year three-day pass for trucks registered outside of California.

In addition, the SCAQMD recommends that any given project's potential contribution to cumulative impacts be assessed using the same significance criteria as for project-specific impacts. Therefore, individual projects that do not generate operational or construction emissions that exceed the SCAQMD's daily thresholds for project-specific impacts would also not cause a cumulatively considerable increase in emissions for those pollutants for which the air basin is in nonattainment and therefore would not be considered to have a significant, adverse air quality impact. Alternatively, individual Project-related construction and operational emissions that exceed SCAQMD thresholds for project-specific impacts would be considered cumulatively considerable. As previously noted, the Project would exceed the applicable SCAQMD regional thresholds for operational-source NOx emissions. As such, the Project would be considered cumulatively considerable in terms of its effect on regional air quality.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents ($CO2_2e$), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged

over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.[1]
CH_4	Methane is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.[2]
N_2O	Nitrous oxide is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.[3]

Sources: [1]US EPA 2016a, [2] USEPA 2016b, [3] USEPA 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.1.1 Sources of Greenhouse Gas Emissions

In July 2018, CARB released the 2018 edition of the California GHG inventory covering calendar year 2016 emissions. In 2016, California emitted 429.4 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2016, accounting for approximately 41 percent of total GHG emissions in the state. This sector was followed by the industrial sector (23 percent) and the electric power sector including both in- and out-of-state sources (16 percent) (CARB 2018b).

Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

3.2 Regulatory Framework

3.2.1 State

Executive Order S-3-05

EO S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

While dated, this EO remains relevant because a more recent California Appellate Court decision, *Cleveland National Forest Foundation v. San Diego Association of Governments* (November 24, 2014) 231 Cal.App.4th 1056, examined whether it should be viewed as having the equivalent force of a legislative mandate for specific emissions reductions. While the California Supreme Court ruled that the San Diego Association of Governments did not abuse its discretion by declining "to adopt the 2050 goal as a measure of significance in light of the fact that the Executive Order does not specify any plan or implementation measures to achieve its goal, the decision also recognized that the goal of a 40 percent reduction in 1990 GHG levels by 2030 is "widely acknowledged" as a "necessary interim target to ensure that California meets its longer-range goal of reducing greenhouse gas emissions 80 percent below 1990 levels by the year 2050.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code § 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). AB 32 anticipates that the GHG reduction goals will be met, in part, through local government actions. CARB has identified a GHG reduction target of 15 percent from current levels for local governments and notes that successful implementation relies on local governments' land use planning and urban growth decisions.

Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which was re-approved by CARB on August 24, 2011, that outlines measures to meet the 2020 GHG reduction goals. To meet these goals, California must reduce its GHG emissions by 30 percent below projected 2020 business-as-usual emissions levels or about 15 percent from today's levels. The Scoping Plan recommends measures for further study and possible state implementation, such as new fuel regulations. It estimates that a reduction of 174 million metric tons of CO_2e (about 191 million U.S. tons) from the transportation, energy, agriculture, and forestry sectors and other sources could be achieved should the State implement all of the measures in the Scoping Plan.

The Scoping Plan is required by AB 32 to be updated at least every five years. The first update to the AB 32 Scoping Plan was approved on May 22, 2014 by CARB. The 2017 Scoping Plan Update was adopted on

December 14, 2017. The Scoping Plan Update addresses the 2030 target established by SB 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include: increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

Executive Order B-30-15

On April 20, 2015 Governor Brown signed EO B-30-15 to establish a California GHG reduction target of 40 percent below 1990 levels by 2030. The Governor's EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically established levels needed in the U.S. to limit global warming below 2˚C, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include § 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

Senate Bill X1-2 of 2011, Senate Bill 350 of 2015, and Senate Bill 100 of 2018

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California.

In October 2015, SB 350 was signed by Governor Edmund (Jerry) Brown, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from renewable resources by 2030. In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60 percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

3.2.2 Local

South Coast Air Quality Management District

To provide guidance to local lead agencies on determining significance for GHG emissions in CEQA documents, SCAQMD staff is convening an ongoing GHG CEQA Significance Threshold Working Group. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that provide input to SCAQMD staff on developing the significance thresholds. On October 8, 2008, the SCAQMD released the *Draft AQMD Staff CEQA GHG Significance Thresholds*. These thresholds have not been finalized and continue to be developed through the working group.

The SCAQMD has not announced when staff is expecting to present a finalized version of its GHG thresholds to the governing board. On September 28, 2010, the SCAQMD recommended a numeric "bright-line" threshold of 10,000 metric tons per year of CO_2e for industrial land use projects. This threshold was developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. This working group was formed to assist SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State Office of Planning and Research (OPR), CARB, the Attorney General's Office, a variety of city and county planning departments in the SoCAB, various utilities such as sanitation and power companies throughout the SoCAB, industry groups, and environmental and professional organizations. The numeric "bright line" was developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provides guidance to CEQA practitioners with regard to determining whether GHG emissions from a proposed industrial land use project are significant.

Southern California Association of Governments

On April 7, 2016, the SCAG Regional Council adopted the *2016-2040 Regional Transportation Plan/ Sustainable Communities Strategy* (2016 RTP/SCS). The 2016 RTP/SCS charts a course for closely integrating land use and transportation – so that the region can grow smartly and sustainably. It was prepared through a collaborative, continuous, and comprehensive process with input from local governments, county transportation commissions, tribal governments, non-profit organizations, businesses and local stakeholders within the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura. The 2016 RTP/SCS is a long-range visioning plan that balances future mobility and housing needs with economic, environmental and public health goals. The SCAG region strives toward sustainability through integrated land use and transportation planning. The SCAG region must achieve specific federal air quality standards and is required by State law to lower regional GHG emissions.

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to greenhouse gas emissions if it would:

1) generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment or

2) conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

SCAQMD Thresholds

On September 28, 2010, the SCAQMD recommended a numeric, bright-line threshold of 10,000 metric tons of CO_2e annually for industrial land uses. This threshold was developed as part of the SCAQMD GHG CEQA Significance Threshold Working Group. The working group was formed to assist the SCAQMD's efforts to develop a GHG significance threshold and is composed of a wide variety of stakeholders including the State OPR, CARB, the Attorney General's Office, a variety of city and county planning departments in the SoCAB, various utilities such as sanitation and power companies throughout the basin, industry groups, and environmental and professional organizations. SCAQMD thresholds were developed to be consistent with CEQA requirements for developing significance thresholds, are supported by substantial evidence, and provide guidance to CEQA practitioners and lead agencies with regard to determining whether GHG emissions from a proposed project are significant.

For the purposes of this evaluation, the Proposed Project will first be compared to the SCAQMD numeric bright-line threshold of 10,000 metric tons of CO_2e annually for industrial project. The Project is also evaluated for compliance with SCAG's 2016–2040 RTP/SCS, which establishes an overall GHG target for the Project region consistent with both the target date of AB 32 (2020) and the post-2020 GHG reduction goals of SB 32

3.3.2 Methodology

GHG-related impacts were assessed in accordance with methodologies recommended by CARB and the SCAQMD, as well as in consideration of the NOP comment letters received from both the SCAQMD and CARB as presented in Appendix A of the Draft EIR prepared for the Project. Where GHG emission quantification was required, emissions were modeled using the CalEEMod, version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project construction-generated GHG emissions were primarily calculated using CalEEMod model defaults for Los Angeles County. Operational GHG emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA (2019). It is noted that the SCAQMD NOP comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 sf of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD.

3.3.3 Impact Analysis

Contribution of Greenhouse Gas Emissions

Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3-2 illustrates the specific construction-generated GHG emissions that would result from construction of the Project.

Table 3-2. Construction-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Construction in 2020	694
Construction in 2021	1,239
Total	**1,933**

Source: CalEEMod version 2016.3.2. Refer to Attachment C for Model Data Outputs.
Notes: Emissions estimates account for the site prep and grading of 24.88 acres along with the demolition of 62,500 sf of buildings.

As shown in Table 3-2, Project construction would result in the generation of approximately 1,933 metric tons of CO_2e over the course of construction. Once construction is complete, the generation of these GHG emissions would cease. The amortized construction emissions are added to the annual average operational emissions.

Operations

Operation of the Project would result in GHG emissions predominantly associated with motor vehicle use. Long-term operational GHG emissions attributable to the Project are identified in Table 3-3 and compared to SCAQMD's interim screening level numeric bright-line threshold of 10,000 metric tons of CO_2e annually. As previously described, operational GHG emissions were based on the Project site plans and the estimated traffic trip generation rates and Project fleet mix from KOA (2019). As previously described, the SCAQMD NOP comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 sf of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD. Consistent with SCAQMD recommendations, in order to more accurately account for the trip distribution patterns of freight trucks, the average trip length is calculated at 49.8 miles, which represents the average distance between the Project site and the Port of Los Angeles/Long Beach, the Project site and the Banning Pass, the Project Site and the San Diego County line, the Project site and the Cajon Pass, and the Project site and downtown Los Angeles.

Table 3-3. Operational-Related GHG Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Construction Emissions (amortized over the 30-year life of the Project)	64
Area Source Emissions	0
Energy Source Emissions	1,882
Mobile Source Emissions	34,493
Solid Waste Emissions	472
Water Emissions	98
Total Emissions	**37,009**

Source: CalEEMod version 2016.3.2. Refer to Attachment C for Model Data Outputs.

As shown in Table 3-3, operational-generated emissions would exceed the SCAQMD's numeric bright-line threshold of 10,000 metric tons of CO_2e annually. A large majority of these emissions would be generated by mobile sources, which is an emission source that cannot be regulated by the City of Irwindale. Additionally, GHG are global pollutants. They can be carried miles away from the original source and have long atmospheric lifetimes compared to that of local pollutants. GHG Emissions do not directly pose a threat to human health but can have numerous indirect effects. As previously stated, GHG emissions have been directly correlate to climate change. This can lead to events such as droughts, heat waves, increased intensity in storm events and rising sea levels. These can result in decrease precipitation, increased wildfires, saltwater infiltration of groundwater tables and decreased crop yields. A reduction of vehicle trips to and from the Proposed Project site would reduce the amount of mobile emissions. Methods of reducing vehicle trips include carpooling, transit, cycling, and pedestrian connections. However, this Project is proposing an industrial warehouse and the reduction of vehicle trips is only feasible for the employees working in the facility, though the majority of traffic trips instigated by the Project would be related to haul truck trips transporting freight.

As stated above, the State of California, along with the SCAQMD, has implemented numerous strategies pertaining to trucks and the reduction of emissions that directly apply to the Project. Urban goods delivery is an essential component of the greater freight system and vital to the urban economy. While urban goods delivery represents a small share of urban traffic, it generates a disproportionate amount of GHG emissions. The State of California promulgates policies designed and implemented to improve the efficiency and environmental footprint of the urban freight system, including the introduction of zero and near-zero emission vehicles—a strategy embedded in the Governor's Sustainable Freight Action Plan as well as CARB's AB 32 Scoping Plan, Statewide Implementation Plan, and Mobile Source Strategy.

Additionally, the Project is proposing an industrial warehouse use in close proximity to the I-605, I-10, and I-205, which are major regional freeway corridors. Further, the I-10 corridor has been identified as a "Major International Trade Highway Route" in the California State Goods Movement Action Plan (2007) and therefore serves to accommodate existing truck trips along the interstate. The Goods Movement Action Plan is a Statewide initiative to improve and expand California's goods movement industry and

infrastructure in a manner which will increase mobility and relieve traffic congestion as well as reduce GHG emissions. The Plan further identifies I-10 (located 2.2 miles south of the Project site and linked to the Project site by the I-605) as a "Priority Corridor" for development towards more efficient goods movement and anticipates that the development of good movement-supporting facilities, such as industrial warehouses like that proposed by the Project, will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related GHG emissions.

Furthermore, both CARB and the SCAQMD have prepared NOP letters concerning the Proposed Project that contain several mitigation measure recommendations to reduce Project GHG emissions generated by Project operations. Thus, the following CARB and SCAQMD mitigation is recommended for the Proposed Project:

The following GHG reduction measures shall be incorporated during Project operations:

GHG-1: Prior to the certificate of occupancy issuance, the Project Applicant shall demonstrate to the satisfaction of the City of Irwindale Community Development Department Manager that the following measures would be implemented during Project operations. These measures shall be enforced and maintained through Covenants, Codes, and Restrictions (CC&Rs), or other means acceptable to the City of Irwindale Community Development Department Manager.

- Maximize use of solar energy, including solar panels.
- Install the maximum possible number of solar energy arrays on the building roof and/or on the Project site to generate solar energy for the facility.
- Maximize the planting of trees in landscaping and parking lots.
- Employ the use of light-colored paving and roofing materials.
- Utilize only Energy Star heating, cooling, and lighting devices and appliances.
- Employ the use of electric or alternatively-fueled sweeper with HEPA filters.

Despite these efforts set forth above, including imposition of CARB and SCAQMD recommendations contained in mitigation measure **GHG-1**, Project-instigated heavy-duty truck travel would result in SCAQMD industrial land use significance threshold to be exceeded.

Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

The City of Irwindale does not currently have an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions. However, Irwindale is a member city of the SCAG. SCAG's 2016–2040 RTP/SCS, adopted April 7, 2016, is a long-range visioning plan that balances future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS embodies a collective vision for the region's future and is developed with input from local governments, county transportation commissions, tribal governments, nonprofit organizations, businesses, and local stakeholders in Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura counties. The RTP/SCS establishes GHG

emissions goals for automobiles and light-duty trucks for 2020 and 2035 and establishes an overall GHG target for the region consistent with both the Statewide GHG-reduction targets for 2020 and the post-2020 statewide GHG reduction goals. The 2016 RTP/SCS contains over 4,000 transportation projects, including highway improvements, railroad grade separations, bicycle lanes, new transit hubs, and replacement bridges. These future investments were included in county plans developed by the six-county transportation commissions and seek to reduce traffic bottlenecks, improve the efficiency of the region's network, and expand mobility choices. The RTP/SCS is an important planning document for the region, allowing project sponsors to qualify for federal funding. In addition, the RTP/SCS is supported by a combination of transportation and land use strategies that help the region achieve state GHG emission reduction goals and federal CAA requirements, preserve open space areas, improve public health and roadway safety, support the vital goods movement industry, and use resources more efficiently. The Proposed Project's consistency with the RTP/SCS goals is analyzed in detail in Table 3-4.

Table 3-4. Consistency with SCAG's RTP/SCS Goals

SCAG Goals	Compliance with Goal
Goal 1: Align the plan investments and policies with improving regional economic development and competitiveness.	**Not Applicable**: This is not a project-specific policy and is therefore not applicable.
Goal 2: Maximize mobility and accessibility for all people and goods in the region.	**Consistent**: Improvements to the transportation network in Irwindale are developed and maintained to meet the needs of local and regional transportation and to ensure efficient mobility. A number of regional and local plans and programs are used to guide development and maintenance of transportation networks, including but not limited to: • Caltrans Traffic Impact Studies Guidelines • Caltrans Highway Capacity Manual • SCAG RTP/SCS The Project is proposing an industrial warehouse use in close proximity to I-605, I-10, and I-205, which are major regional freeway corridors. Further, the I-10 corridor has been identified as a "Major International Trade Highway Route" in the California State Goods Movement Action Plan and therefore serves to accommodate existing truck trips along the interstate. The Goods Movement Action Plan is a statewide initiative to improve and expand California's goods movement industry and infrastructure in a manner which will increase mobility and relieve traffic congestion as well as reduce GHG emissions. The Plan further identifies I-10 (located 2.2 miles south of the Project site and linked to the Project site by I-605) as a "Priority Corridor" for development towards more efficient goods movement and anticipates that the development of good movement-supporting facilities, such as industrial warehouses like that proposed by the Project, will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related GHG emissions.

Table 3-4. Consistency with SCAG's RTP/SCS Goals

SCAG Goals	Compliance with Goal
Goal 3: Ensure travel safety and reliability for all people and goods in the region.	**Consistent**: All modes of transit in Irwindale are required to follow safety standards set by corresponding regulatory documents. Pedestrian walkways and bicycle routes must follow safety precautions and standards established by local (e.g., City of Irwindale, County of Los Angeles) and regional (e.g., SCAG, Caltrans) agencies. Roadways for motorists must follow safety standards established for the local and regional plans. The Project is proposing an industrial warehouse use in close proximity to the I-605, I-10, and I-205, which are major regional freeway corridors. Warehouses positioned in close proximity to major freeway corridors are considered goods-movement-supporting facilities, and will improve the efficiency of overall goods movement throughout the state, and thus reduce truck-related GHG emissions.
Goal 4: Preserve and ensure a sustainable regional transportation system.	**Consistent**: All new roadway developments and improvements to the existing transportation network must be assessed with some level of traffic analysis (e.g., traffic assessments, traffic impact studies) to determine how the developments would impact existing traffic capacities and to determine the needs for improving future traffic capacities.
Goal 5: Maximize the productivity of our transportation system.	**Consistent**: The local and regional transportation system would be improved and maintained to encourage efficiency and productivity. The City of Irwindale's Public Works and Utility Department oversees the improvement and maintenance of all aspects of the public right-of-way on an as-needed basis. The City also strives to maximize productivity of the region's public transportation system (e.g., bus, bicycle) for residents, visitors, and workers coming into and out of Irwindale
Goal 6: Protect the environment and health of our residents by improving air quality and encouraging active transportation (non-motorized transportation, such as bicycling and walking).	**Consistent**: The reduction of energy use, improvement of air quality, and promotion of more environmentally sustainable development are encouraged through the development of alternative transportation methods, green design techniques for buildings, and other energy-reducing techniques. For example, development projects are required to comply with the provisions of the California Building and Energy Efficiency Standards and the Green Building Standards Code (CALGreen). The City also strives to maximize the protection of the environment and improvement of air quality by encouraging and improving the use of the region's public transportation system (e.g., bus, bicycle) for residents, visitors, and workers coming into and out of Irwindale.
Goal 7: Actively encourage and create incentives for energy efficiency, where possible.	**Not Applicable**: This is not a project-specific policy and is therefore not applicable
Goal 8: Encourage land use and growth patterns that facilitate transit and non-motorized transportation.	**Consisten**t: See response to RTP/SCS Goal 6.

Table 3-4. Consistency with SCAG's RTP/SCS Goals

SCAG Goals	Compliance with Goal
Goal 9: Maximize the security of our transportation system through improved system monitoring, rapid recovery planning, and coordination with other security agencies.	**Consistent**: The City of Irwindale monitors existing and newly constructed roadways and transit routes to determine the adequacy and safety of these systems. Other local and regional agencies (e.g., Los Angeles County Transportation Department, Caltrans, SCAG) work with the City to manage these systems. Security situations involving roadways and evacuations would be addressed in the County of Los Angles emergency management protocols (e.g., Los Angeles County Operational Area Emergency Operations Plan) developed in accordance with the State and federal mandated emergency management regulations.

Implementing SCAG's RTP/SCS will greatly reduce the regional GHG emissions from transportation, helping to achieve statewide emission reduction targets. As shown, the Proposed Project would in no way conflict with the stated goals of the RTP/SCS; therefore, the Proposed Project would not interfere with SCAG's ability to achieve the region's year 2020 and post-2020 mobile source GHG reduction targets outlined in the 2016 RTP/SCS, and it can be assumed that regional mobile emissions will decrease in line with the goals of the RTP/SCS. Furthermore, the Proposed Project is not regionally significant per CEQA Guidelines Section 15206 and as such, it would not conflict with the SCAG RTP/SCS targets, since those targets were established and are applicable on a regional level.

The Proposed Project would not conflict with an adopted plan, policy, or regulation pertaining to GHGs.

Cumulative GHG Impacts

Climate change is a global problem. And GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have much longer atmospheric lifetimes of one year to several thousand years that allow them to be dispersed around the globe.

It is generally the case that an individual project of this size and nature is of insufficient magnitude by itself to influence climate change or result in a substantial contribution to the global GHG inventory. GHG impacts are recognized as exclusively cumulative impacts; there are no non-cumulative GHG emission impacts from a climate change perspective. The additive effect of Project-related GHGs would not result in a reasonably foreseeable cumulatively considerable contribution to global climate change. In addition, the Proposed Project as well as other cumulative related projects would also be subject to all applicable regulatory requirements, which would further reduce GHG emissions. As previously discussed, the Proposed Project would not conflict with the 2016 RTP/SCS. As a result, the Project would not conflict with any GHG reduction plans. However, the Project's cumulative contribution of GHG emissions would surpass the SCAQMD significance threshold for industrial land uses.

4.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A – CalEEMod Output File for Air Quality Emissions

Attachment B – Operational Health Risk Assessment - Diesel Particulate Matter

Attachment C – CalEEMod Output File for Greenhouse Gas Emissions

ATTACHMENT A

CalEEMod Output Files – Criteria Air Pollutants

13131 Los Angeles Street Industrial Project

Los Angeles-South Coast County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	528.71	1000sqft	24.88	528,710.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	511.47	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SCE 2017 CO2 Intensity Factor

Land Use - Lot acreage update to match that of the project.

Construction Phase - Construction, paving and coating will occur at the same time.

Demolition -

Vehicle Trips - Trips updated to match the traffic report.

Construction Off-road Equipment Mitigation - SCAQMD rule 403. Percent reductions based on fugutive dust mitigation measures-Table 11-4

Fleet Mix - Fleet mix updated to match that of the traffic report provided by KOA.

Water And Wastewater - Water use per Section 3.11 of the Draft EIR

Solid Waste - Solid waste per Section 3.11 of the Draft EIR

13131 Los Angeles Street Industrial Project - Los Angeles-South Coast County, Summer

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	370.00
tblConstructionPhase	NumDays	20.00	370.00
tblConstructionPhase	PhaseEndDate	4/23/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	2/26/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	7/26/2019	5/28/2020
tblConstructionPhase	PhaseEndDate	9/27/2019	7/30/2020
tblConstructionPhase	PhaseEndDate	3/26/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	8/9/2019	6/11/2020
tblConstructionPhase	PhaseStartDate	3/27/2021	7/31/2020
tblConstructionPhase	PhaseStartDate	9/28/2019	7/31/2020
tblConstructionPhase	PhaseStartDate	7/1/2019	5/1/2020
tblConstructionPhase	PhaseStartDate	8/10/2019	6/12/2020
tblConstructionPhase	PhaseStartDate	2/27/2021	7/31/2020
tblConstructionPhase	PhaseStartDate	7/27/2019	5/29/2020
tblFleetMix	HHD	0.03	0.10
tblFleetMix	LDA	0.55	0.44
tblFleetMix	MH	8.9100e-004	0.00
tblFleetMix	MHD	0.02	0.06
tblFleetMix	OBUS	2.4790e-003	0.00
tblFleetMix	SBUS	6.8200e-004	0.00
tblFleetMix	UBUS	2.2700e-003	0.00
tblLandUse	LotAcreage	12.14	24.88
tblProjectCharacteristics	CO2IntensityFactor	702.44	511.47
tblSolidWaste	SolidWasteGenerationRate	655.60	938.60

tblVehicleTrips	CC_TL	8.40	49.80
tblVehicleTrips	CNW_TL	6.90	49.80
tblVehicleTrips	CW_TL	16.60	49.80
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	6.54
tblVehicleTrips	SU_TR	0.68	6.54
tblVehicleTrips	WD_TR	6.97	6.54
tblWater	IndoorWaterUseRate	122,264,187.50	22,395,735.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	18.5675	50.2630	48.0602	0.1084	18.2675	2.1991	20.4666	9.9840	2.0232	12.0072	0.0000	10,757.2366	10,757.2366	1.9498	0.0000	10,797.4851
2021	18.0907	41.1528	46.5721	0.1072	3.6979	1.7731	5.4710	0.9934	1.6588	2.6521	0.0000	10,633.4276	10,633.4276	1.5844	0.0000	10,673.0366
Maximum	**18.5675**	**50.2630**	**48.0602**	**0.1084**	**18.2675**	**2.1991**	**20.4666**	**9.9840**	**2.0232**	**12.0072**	**0.0000**	**10,757.2366**	**10,757.2366**	**1.9498**	**0.0000**	**10,797.4851**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	18.5675	50.2630	48.0602	0.1084	7.1771	2.1991	9.3762	3.9092	2.0232	5.9323	0.0000	10,757.2366	10,757.2366	1.9498	0.0000	10,797.4851
2021	18.0907	41.1528	46.5721	0.1072	2.4469	1.7731	4.2200	0.6863	1.6588	2.3451	0.0000	10,633.4276	10,633.4276	1.5844	0.0000	10,673.0366
Maximum	**18.5675**	**50.2630**	**48.0602**	**0.1084**	**7.1771**	**2.1991**	**9.3762**	**3.9092**	**2.0232**	**5.9323**	**0.0000**	**10,757.2366**	**10,757.2366**	**1.9498**	**0.0000**	**10,797.4851**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.19**	**0.00**	**47.58**	**58.14**	**0.00**	**43.54**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Energy	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Mobile	23.4306	250.7193	431.5925	2.0802	135.4230	1.6429	137.0659	36.4394	1.5456	37.9850		214,107.2478	214,107.2478	8.2481		214,313.4507
Total	**35.5296**	**253.2902**	**433.8059**	**2.0956**	**135.4230**	**1.8384**	**137.2614**	**36.4394**	**1.7412**	**38.1806**		**217,191.8602**	**217,191.8602**	**8.3076**	**0.0566**	**217,416.4004**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Energy	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Mobile	23.4306	250.7193	431.5925	2.0802	135.4230	1.6429	137.0659	36.4394	1.5456	37.9850		214,107.2478	214,107.2478	8.2481		214,313.4507
Total	**35.5296**	**253.2902**	**433.8059**	**2.0956**	**135.4230**	**1.8384**	**137.2614**	**36.4394**	**1.7412**	**38.1806**		**217,191.8602**	**217,191.8602**	**8.3076**	**0.0566**	**217,416.4004**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/28/2020	5	20	
2	Site Preparation	Site Preparation	5/29/2020	6/11/2020	5	10	
3	Grading	Grading	6/12/2020	7/30/2020	5	35	
4	Building Construction	Building Construction	7/31/2020	12/30/2021	5	370	
5	Paving	Paving	7/31/2020	12/30/2021	5	370	
6	Architectural Coating	Architectural Coating	7/31/2020	12/30/2021	5	370	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 793,065; Non-Residential Outdoor: 264,355; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	284.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	222.00	87.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	44.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0761	0.0000	3.0761	0.4658	0.0000	0.4658			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.0761**	**1.6587**	**4.7348**	**0.4658**	**1.5419**	**2.0076**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1240	4.0831	0.9048	0.0112	0.2483	0.0130	0.2613	0.0681	0.0125	0.0805		1,215.2812	1,215.2812	0.0827		1,217.3492
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.1931**	**4.1322**	**1.5615**	**0.0130**	**0.4159**	**0.0144**	**0.4304**	**0.1125**	**0.0138**	**0.1263**		**1,391.6981**	**1,391.6981**	**0.0883**		**1,393.9052**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1997	0.0000	1.1997	0.1816	0.0000	0.1816			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**1.1997**	**1.6587**	**2.8584**	**0.1816**	**1.5419**	**1.7235**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1240	4.0831	0.9048	0.0112	0.1732	0.0130	0.1862	0.0496	0.0125	0.0621		1,215.2812	1,215.2812	0.0827		1,217.3492
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1094	1.4000e-003	0.1108	0.0302	1.2900e-003	0.0315		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.1931**	**4.1322**	**1.5615**	**0.0130**	**0.2825**	**0.0144**	**0.2970**	**0.0798**	**0.0138**	**0.0935**		**1,391.6981**	**1,391.6981**	**0.0883**		**1,393.9052**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.0458**	**2.1974**	**9.2433**	**3.8730**	**2.0216**	**5.8946**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0828	0.0589	0.7881	2.1300e-003	0.1312	1.6800e-003	0.1329	0.0362	1.5500e-003	0.0377		211.7003	211.7003	6.6700e-003		211.8672
Total	**0.0828**	**0.0589**	**0.7881**	**2.1300e-003**	**0.1312**	**1.6800e-003**	**0.1329**	**0.0362**	**1.5500e-003**	**0.0377**		**211.7003**	**211.7003**	**6.6700e-003**		**211.8672**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0655	0.8757	2.3600e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		235.2226	235.2226	7.4200e-003		235.4080
Total	**0.0920**	**0.0655**	**0.8757**	**2.3600e-003**	**0.2236**	**1.8700e-003**	**0.2254**	**0.0593**	**1.7200e-003**	**0.0610**		**235.2226**	**235.2226**	**7.4200e-003**		**235.4080**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.3826**	**2.1739**	**5.5565**	**1.4026**	**2.0000**	**3.4026**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0655	0.8757	2.3600e-003	0.1458	1.8700e-003	0.1477	0.0402	1.7200e-003	0.0419		235.2226	235.2226	7.4200e-003		235.4080
Total	**0.0920**	**0.0655**	**0.8757**	**2.3600e-003**	**0.1458**	**1.8700e-003**	**0.1477**	**0.0402**	**1.7200e-003**	**0.0419**		**235.2226**	**235.2226**	**7.4200e-003**		**235.4080**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3094	9.2544	2.4247	0.0226	0.5570	0.0436	0.6005	0.1604	0.0417	0.2020		2,410.1149	2,410.1149	0.1471		2,413.7917
Worker	1.0217	0.7268	9.7202	0.0262	2.4814	0.0207	2.5022	0.6581	0.0191	0.6772		2,610.9706	2,610.9706	0.0823		2,613.0285
Total	**1.3311**	**9.9812**	**12.1449**	**0.0488**	**3.0384**	**0.0643**	**3.1027**	**0.8185**	**0.0608**	**0.8792**		**5,021.0854**	**5,021.0854**	**0.2294**		**5,026.8202**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3094	9.2544	2.4247	0.0226	0.3982	0.0436	0.4418	0.1214	0.0417	0.1631		2,410.1149	2,410.1149	0.1471		2,413.7917
Worker	1.0217	0.7268	9.7202	0.0262	1.6185	0.0207	1.6393	0.4463	0.0191	0.4654		2,610.9706	2,610.9706	0.0823		2,613.0285
Total	**1.3311**	**9.9812**	**12.1449**	**0.0488**	**2.0168**	**0.0643**	**2.0811**	**0.5677**	**0.0608**	**0.6285**		**5,021.0854**	**5,021.0854**	**0.2294**		**5,026.8202**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2645	8.4468	2.2082	0.0224	0.5570	0.0173	0.5743	0.1604	0.0165	0.1769		2,391.4615	2,391.4615	0.1409		2,394.9837
Worker	0.9516	0.6541	8.9416	0.0254	2.4814	0.0201	2.5015	0.6581	0.0185	0.6766		2,528.0691	2,528.0691	0.0745		2,529.9313
Total	**1.2161**	**9.1009**	**11.1498**	**0.0478**	**3.0384**	**0.0373**	**3.0758**	**0.8185**	**0.0350**	**0.8534**		**4,919.5306**	**4,919.5306**	**0.2154**		**4,924.9150**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2645	8.4468	2.2082	0.0224	0.3983	0.0173	0.4155	0.1214	0.0165	0.1379		2,391.4615	2,391.4615	0.1409		2,394.9837
Worker	0.9516	0.6541	8.9416	0.0254	1.6185	0.0201	1.6386	0.4463	0.0185	0.4648		2,528.0691	2,528.0691	0.0745		2,529.9313
Total	**1.2161**	**9.1009**	**11.1498**	**0.0478**	**2.0168**	**0.0373**	**2.0541**	**0.5677**	**0.0350**	**0.6027**		**4,919.5306**	**4,919.5306**	**0.2154**		**4,924.9150**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0690**	**0.0491**	**0.6568**	**1.7700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**176.4169**	**176.4169**	**5.5600e-003**		**176.5560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0690	0.0491	0.6568	1.7700e-003	0.1094	1.4000e-003	0.1108	0.0302	1.2900e-003	0.0315		176.4169	176.4169	5.5600e-003		176.5560
Total	**0.0690**	**0.0491**	**0.6568**	**1.7700e-003**	**0.1094**	**1.4000e-003**	**0.1108**	**0.0302**	**1.2900e-003**	**0.0315**		**176.4169**	**176.4169**	**5.5600e-003**		**176.5560**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0643	0.0442	0.6042	1.7100e-003	0.1094	1.3500e-003	0.1107	0.0302	1.2500e-003	0.0314		170.8155	170.8155	5.0300e-003		170.9413
Total	**0.0643**	**0.0442**	**0.6042**	**1.7100e-003**	**0.1094**	**1.3500e-003**	**0.1107**	**0.0302**	**1.2500e-003**	**0.0314**		**170.8155**	**170.8155**	**5.0300e-003**		**170.9413**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**13.4885**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2025	0.1441	1.9265	5.2000e-003	0.4918	4.1100e-003	0.4959	0.1304	3.7900e-003	0.1342		517.4897	517.4897	0.0163		517.8976
Total	**0.2025**	**0.1441**	**1.9265**	**5.2000e-003**	**0.4918**	**4.1100e-003**	**0.4959**	**0.1304**	**3.7900e-003**	**0.1342**		**517.4897**	**517.4897**	**0.0163**		**517.8976**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**13.4885**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2025	0.1441	1.9265	5.2000e-003	0.3208	4.1100e-003	0.3249	0.0885	3.7900e-003	0.0922		517.4897	517.4897	0.0163		517.8976
Total	**0.2025**	**0.1441**	**1.9265**	**5.2000e-003**	**0.3208**	**4.1100e-003**	**0.3249**	**0.0885**	**3.7900e-003**	**0.0922**		**517.4897**	**517.4897**	**0.0163**		**517.8976**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**13.4652**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1886	0.1296	1.7722	5.0300e-003	0.4918	3.9700e-003	0.4958	0.1304	3.6600e-003	0.1341		501.0587	501.0587	0.0148		501.4278
Total	**0.1886**	**0.1296**	**1.7722**	**5.0300e-003**	**0.4918**	**3.9700e-003**	**0.4958**	**0.1304**	**3.6600e-003**	**0.1341**		**501.0587**	**501.0587**	**0.0148**		**501.4278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**13.4652**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1886	0.1296	1.7722	5.0300e-003	0.3208	3.9700e-003	0.3248	0.0885	3.6600e-003	0.0921		501.0587	501.0587	0.0148		501.4278
Total	**0.1886**	**0.1296**	**1.7722**	**5.0300e-003**	**0.3208**	**3.9700e-003**	**0.3248**	**0.0885**	**3.6600e-003**	**0.0921**		**501.0587**	**501.0587**	**0.0148**		**501.4278**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	23.4306	250.7193	431.5925	2.0802	135.4230	1.6429	137.0659	36.4394	1.5456	37.9850		214,107.2478	214,107.2478	8.2481		214,313.4507
Unmitigated	23.4306	250.7193	431.5925	2.0802	135.4230	1.6429	137.0659	36.4394	1.5456	37.9850		214,107.2478	214,107.2478	8.2481		214,313.4507

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	3,458.82	3,458.82	3458.82	62,698,737	62,698,737
Total	3,458.82	3,458.82	3,458.82	62,698,737	62,698,737

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	49.80	49.80	49.80	59.00	28.00	13.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.441202	0.045177	0.202743	0.121510	0.016147	0.006143	0.061000	0.101000	0.000000	0.000000	0.005078	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
NaturalGas Unmitigated	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	26218.2	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Total		**0.2828**	**2.5704**	**2.1592**	**0.0154**		**0.1954**	**0.1954**		**0.1954**	**0.1954**		**3,084.4967**	**3,084.4967**	**0.0591**	**0.0566**	**3,102.8263**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	26.2182	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Total		**0.2828**	**2.5704**	**2.1592**	**0.0154**		**0.1954**	**0.1954**		**0.1954**	**0.1954**		**3,084.4967**	**3,084.4967**	**0.0591**	**0.0566**	**3,102.8263**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Unmitigated	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0600e-003	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Total	**11.8163**	**5.0000e-004**	**0.0542**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1157**	**0.1157**	**3.1000e-004**		**0.1234**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0600e-003	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Total	**11.8163**	**5.0000e-004**	**0.0542**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1157**	**0.1157**	**3.1000e-004**		**0.1234**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

13131 Los Angeles Street Industrial Project

Los Angeles-South Coast County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	528.71	1000sqft	24.88	528,710.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	511.47	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SCE 2017 CO2 Intensity Factor

Land Use - Lot acreage update to match that of the project.

Construction Phase - Construction, paving and coating will occur at the same time.

Demolition -

Vehicle Trips - Trips updated to match the traffic report.

Construction Off-road Equipment Mitigation - SCAQMD rule 403. Percent reductions based on fugutive dust mitigation measures-Table 11-4

Fleet Mix - Fleet mix updated to match that of the traffic report provided by KOA.

Water And Wastewater - Water use per Section 3.11 of the Draft EIR

Solid Waste - Solid waste per Section 3.11 of the Draft EIR

13131 Los Angeles Street Industrial Project - Los Angeles-South Coast County, Winter

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	370.00
tblConstructionPhase	NumDays	20.00	370.00
tblConstructionPhase	PhaseEndDate	4/23/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	2/26/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	7/26/2019	5/28/2020
tblConstructionPhase	PhaseEndDate	9/27/2019	7/30/2020
tblConstructionPhase	PhaseEndDate	3/26/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	8/9/2019	6/11/2020
tblConstructionPhase	PhaseStartDate	3/27/2021	7/31/2020
tblConstructionPhase	PhaseStartDate	9/28/2019	7/31/2020
tblConstructionPhase	PhaseStartDate	7/1/2019	5/1/2020
tblConstructionPhase	PhaseStartDate	8/10/2019	6/12/2020
tblConstructionPhase	PhaseStartDate	2/27/2021	7/31/2020
tblConstructionPhase	PhaseStartDate	7/27/2019	5/29/2020
tblFleetMix	HHD	0.03	0.10
tblFleetMix	LDA	0.55	0.44
tblFleetMix	MH	8.9100e-004	0.00
tblFleetMix	MHD	0.02	0.06
tblFleetMix	OBUS	2.4790e-003	0.00
tblFleetMix	SBUS	6.8200e-004	0.00
tblFleetMix	UBUS	2.2700e-003	0.00
tblLandUse	LotAcreage	12.14	24.88
tblProjectCharacteristics	CO2IntensityFactor	702.44	511.47
tblSolidWaste	SolidWasteGenerationRate	655.60	938.60

tblVehicleTrips	CC_TL	8.40	49.80
tblVehicleTrips	CNW_TL	6.90	49.80
tblVehicleTrips	CW_TL	16.60	49.80
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	6.54
tblVehicleTrips	SU_TR	0.68	6.54
tblVehicleTrips	WD_TR	6.97	6.54
tblWater	IndoorWaterUseRate	122,264,187.50	22,395,735.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	18.7244	50.2700	47.2747	0.1059	18.2675	2.1991	20.4666	9.9840	2.0232	12.0072	0.0000	10,498.3027	10,498.3027	1.9494	0.0000	10,538.6405
2021	18.2392	41.2238	45.8367	0.1047	3.6979	1.7736	5.4716	0.9934	1.6593	2.6527	0.0000	10,380.9545	10,380.9545	1.5880	0.0000	10,420.6545
Maximum	**18.7244**	**50.2700**	**47.2747**	**0.1059**	**18.2675**	**2.1991**	**20.4666**	**9.9840**	**2.0232**	**12.0072**	**0.0000**	**10,498.3027**	**10,498.3027**	**1.9494**	**0.0000**	**10,538.6405**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	18.7244	50.2700	47.2747	0.1059	7.1771	2.1991	9.3762	3.9092	2.0232	5.9323	0.0000	10,498.3027	10,498.3027	1.9494	0.0000	10,538.6405
2021	18.2392	41.2238	45.8367	0.1047	2.4469	1.7736	4.2206	0.6863	1.6593	2.3456	0.0000	10,380.9545	10,380.9545	1.5880	0.0000	10,420.6544
Maximum	**18.7244**	**50.2700**	**47.2747**	**0.1059**	**7.1771**	**2.1991**	**9.3762**	**3.9092**	**2.0232**	**5.9323**	**0.0000**	**10,498.3027**	**10,498.3027**	**1.9494**	**0.0000**	**10,538.6405**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**56.19**	**0.00**	**47.58**	**58.14**	**0.00**	**43.53**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Energy	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Mobile	23.0423	259.7777	399.8785	2.0076	135.4230	1.6473	137.0703	36.4394	1.5499	37.9892		206,850.4426	206,850.4426	8.1477		207,054.1362
Total	**35.1414**	**262.3486**	**402.0918**	**2.0230**	**135.4230**	**1.8428**	**137.2658**	**36.4394**	**1.7454**	**38.1848**		**209,935.0550**	**209,935.0550**	**8.2072**	**0.0566**	**210,157.0859**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Energy	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Mobile	23.0423	259.7777	399.8785	2.0076	135.4230	1.6473	137.0703	36.4394	1.5499	37.9892		206,850.4426	206,850.4426	8.1477		207,054.1362
Total	**35.1414**	**262.3486**	**402.0918**	**2.0230**	**135.4230**	**1.8428**	**137.2658**	**36.4394**	**1.7454**	**38.1848**		**209,935.0550**	**209,935.0550**	**8.2072**	**0.0566**	**210,157.0859**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/28/2020	5	20	
2	Site Preparation	Site Preparation	5/29/2020	6/11/2020	5	10	
3	Grading	Grading	6/12/2020	7/30/2020	5	35	
4	Building Construction	Building Construction	7/31/2020	12/30/2021	5	370	
5	Paving	Paving	7/31/2020	12/30/2021	5	370	
6	Architectural Coating	Architectural Coating	7/31/2020	12/30/2021	5	370	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 793,065; Non-Residential Outdoor: 264,355; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	284.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	222.00	87.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	44.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.0761	0.0000	3.0761	0.4658	0.0000	0.4658			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.0761**	**1.6587**	**4.7348**	**0.4658**	**1.5419**	**2.0076**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1271	4.1359	0.9616	0.0110	0.2483	0.0132	0.2615	0.0681	0.0127	0.0807		1,194.3536	1,194.3536	0.0857		1,196.4968
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.2037**	**4.1903**	**1.5631**	**0.0127**	**0.4159**	**0.0146**	**0.4306**	**0.1125**	**0.0140**	**0.1265**		**1,360.4666**	**1,360.4666**	**0.0910**		**1,362.7407**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1997	0.0000	1.1997	0.1816	0.0000	0.1816			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**1.1997**	**1.6587**	**2.8584**	**0.1816**	**1.5419**	**1.7235**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1271	4.1359	0.9616	0.0110	0.1732	0.0132	0.1864	0.0496	0.0127	0.0623		1,194.3536	1,194.3536	0.0857		1,196.4968
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1094	1.4000e-003	0.1108	0.0302	1.2900e-003	0.0315		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.2037**	**4.1903**	**1.5631**	**0.0127**	**0.2825**	**0.0146**	**0.2972**	**0.0798**	**0.0140**	**0.0937**		**1,360.4666**	**1,360.4666**	**0.0910**		**1,362.7407**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.2012	1.6800e-003	0.2029	0.0534	1.5500e-003	0.0549		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.2012**	**1.6800e-003**	**0.2029**	**0.0534**	**1.5500e-003**	**0.0549**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0458	0.0000	7.0458	3.8730	0.0000	3.8730			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**7.0458**	**2.1974**	**9.2433**	**3.8730**	**2.0216**	**5.8946**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0920	0.0652	0.7218	2.0000e-003	0.1312	1.6800e-003	0.1329	0.0362	1.5500e-003	0.0377		199.3357	199.3357	6.2800e-003		199.4927
Total	**0.0920**	**0.0652**	**0.7218**	**2.0000e-003**	**0.1312**	**1.6800e-003**	**0.1329**	**0.0362**	**1.5500e-003**	**0.0377**		**199.3357**	**199.3357**	**6.2800e-003**		**199.4927**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6733**	**2.1739**	**10.8472**	**3.5965**	**2.0000**	**5.5965**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1022	0.0725	0.8020	2.2200e-003	0.2236	1.8700e-003	0.2254	0.0593	1.7200e-003	0.0610		221.4841	221.4841	6.9800e-003		221.6586
Total	**0.1022**	**0.0725**	**0.8020**	**2.2200e-003**	**0.2236**	**1.8700e-003**	**0.2254**	**0.0593**	**1.7200e-003**	**0.0610**		**221.4841**	**221.4841**	**6.9800e-003**		**221.6586**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3826	0.0000	3.3826	1.4026	0.0000	1.4026			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**3.3826**	**2.1739**	**5.5565**	**1.4026**	**2.0000**	**3.4026**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1022	0.0725	0.8020	2.2200e-003	0.1458	1.8700e-003	0.1477	0.0402	1.7200e-003	0.0419		221.4841	221.4841	6.9800e-003		221.6586
Total	**0.1022**	**0.0725**	**0.8020**	**2.2200e-003**	**0.1458**	**1.8700e-003**	**0.1477**	**0.0402**	**1.7200e-003**	**0.0419**		**221.4841**	**221.4841**	**6.9800e-003**		**221.6586**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3235	9.2525	2.6742	0.0220	0.5570	0.0443	0.6012	0.1604	0.0423	0.2027		2,344.2069	2,344.2069	0.1568		2,348.1257
Worker	1.1345	0.8047	8.9024	0.0247	2.4814	0.0207	2.5022	0.6581	0.0191	0.6772		2,458.4733	2,458.4733	0.0775		2,460.4105
Total	**1.4580**	**10.0572**	**11.5767**	**0.0466**	**3.0384**	**0.0650**	**3.1034**	**0.8185**	**0.0614**	**0.8799**		**4,802.6801**	**4,802.6801**	**0.2342**		**4,808.5362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3235	9.2525	2.6742	0.0220	0.3982	0.0443	0.4425	0.1214	0.0423	0.1637		2,344.2069	2,344.2069	0.1568		2,348.1257
Worker	1.1345	0.8047	8.9024	0.0247	1.6185	0.0207	1.6393	0.4463	0.0191	0.4654		2,458.4733	2,458.4733	0.0775		2,460.4105
Total	**1.4580**	**10.0572**	**11.5767**	**0.0466**	**2.0168**	**0.0650**	**2.0818**	**0.5677**	**0.0614**	**0.6291**		**4,802.6801**	**4,802.6801**	**0.2342**		**4,808.5362**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2776	8.4293	2.4427	0.0218	0.5570	0.0178	0.5748	0.1604	0.0171	0.1774		2,325.9061	2,325.9061	0.1502		2,329.6599
Worker	1.0585	0.7241	8.1753	0.0239	2.4814	0.0201	2.5015	0.6581	0.0185	0.6766		2,380.3974	2,380.3974	0.0701		2,382.1486
Total	**1.3362**	**9.1534**	**10.6180**	**0.0457**	**3.0384**	**0.0379**	**3.0763**	**0.8185**	**0.0355**	**0.8540**		**4,706.3035**	**4,706.3035**	**0.2202**		**4,711.8085**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2776	8.4293	2.4427	0.0218	0.3983	0.0178	0.4161	0.1214	0.0171	0.1385		2,325.9061	2,325.9061	0.1502		2,329.6599
Worker	1.0585	0.7241	8.1753	0.0239	1.6185	0.0201	1.6386	0.4463	0.0185	0.4648		2,380.3974	2,380.3974	0.0701		2,382.1486
Total	**1.3362**	**9.1534**	**10.6180**	**0.0457**	**2.0168**	**0.0379**	**2.0547**	**0.5677**	**0.0355**	**0.6032**		**4,706.3035**	**4,706.3035**	**0.2202**		**4,711.8085**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1677	1.4000e-003	0.1691	0.0445	1.2900e-003	0.0458		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0767**	**0.0544**	**0.6015**	**1.6700e-003**	**0.1677**	**1.4000e-003**	**0.1691**	**0.0445**	**1.2900e-003**	**0.0458**		**166.1131**	**166.1131**	**5.2400e-003**		**166.2440**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0767	0.0544	0.6015	1.6700e-003	0.1094	1.4000e-003	0.1108	0.0302	1.2900e-003	0.0315		166.1131	166.1131	5.2400e-003		166.2440
Total	**0.0767**	**0.0544**	**0.6015**	**1.6700e-003**	**0.1094**	**1.4000e-003**	**0.1108**	**0.0302**	**1.2900e-003**	**0.0315**		**166.1131**	**166.1131**	**5.2400e-003**		**166.2440**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235		2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**		**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1677	1.3500e-003	0.1690	0.0445	1.2500e-003	0.0457		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1677**	**1.3500e-003**	**0.1690**	**0.0445**	**1.2500e-003**	**0.0457**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2556	12.9191	14.6532	0.0228		0.6777	0.6777		0.6235	0.6235	0.0000	2,207.2109	2,207.2109	0.7139		2,225.0573
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2556**	**12.9191**	**14.6532**	**0.0228**		**0.6777**	**0.6777**		**0.6235**	**0.6235**	**0.0000**	**2,207.2109**	**2,207.2109**	**0.7139**		**2,225.0573**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0715	0.0489	0.5524	1.6100e-003	0.1094	1.3500e-003	0.1107	0.0302	1.2500e-003	0.0314		160.8377	160.8377	4.7300e-003		160.9560
Total	**0.0715**	**0.0489**	**0.5524**	**1.6100e-003**	**0.1094**	**1.3500e-003**	**0.1107**	**0.0302**	**1.2500e-003**	**0.0314**		**160.8377**	**160.8377**	**4.7300e-003**		**160.9560**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**13.4885**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2249	0.1595	1.7645	4.8900e-003	0.4918	4.1100e-003	0.4959	0.1304	3.7900e-003	0.1342		487.2650	487.2650	0.0154		487.6489
Total	**0.2249**	**0.1595**	**1.7645**	**4.8900e-003**	**0.4918**	**4.1100e-003**	**0.4959**	**0.1304**	**3.7900e-003**	**0.1342**		**487.2650**	**487.2650**	**0.0154**		**487.6489**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**13.4885**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2249	0.1595	1.7645	4.8900e-003	0.3208	4.1100e-003	0.3249	0.0885	3.7900e-003	0.0922		487.2650	487.2650	0.0154		487.6489
Total	**0.2249**	**0.1595**	**1.7645**	**4.8900e-003**	**0.3208**	**4.1100e-003**	**0.3249**	**0.0885**	**3.7900e-003**	**0.0922**		**487.2650**	**487.2650**	**0.0154**		**487.6489**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**13.4652**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2098	0.1435	1.6203	4.7400e-003	0.4918	3.9700e-003	0.4958	0.1304	3.6600e-003	0.1341		471.7905	471.7905	0.0139		472.1376
Total	**0.2098**	**0.1435**	**1.6203**	**4.7400e-003**	**0.4918**	**3.9700e-003**	**0.4958**	**0.1304**	**3.6600e-003**	**0.1341**		**471.7905**	**471.7905**	**0.0139**		**472.1376**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	13.2463					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**13.4652**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2098	0.1435	1.6203	4.7400e-003	0.3208	3.9700e-003	0.3248	0.0885	3.6600e-003	0.0921		471.7905	471.7905	0.0139		472.1376
Total	**0.2098**	**0.1435**	**1.6203**	**4.7400e-003**	**0.3208**	**3.9700e-003**	**0.3248**	**0.0885**	**3.6600e-003**	**0.0921**		**471.7905**	**471.7905**	**0.0139**		**472.1376**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	23.0423	259.7777	399.8785	2.0076	135.4230	1.6473	137.0703	36.4394	1.5499	37.9892		206,850.4426	206,850.4426	8.1477		207,054.1362
Unmitigated	23.0423	259.7777	399.8785	2.0076	135.4230	1.6473	137.0703	36.4394	1.5499	37.9892		206,850.4426	206,850.4426	8.1477		207,054.1362

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	3,458.82	3,458.82	3458.82	62,698,737	62,698,737
Total	3,458.82	3,458.82	3,458.82	62,698,737	62,698,737

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	49.80	49.80	49.80	59.00	28.00	13.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.441202	0.045177	0.202743	0.121510	0.016147	0.006143	0.061000	0.101000	0.000000	0.000000	0.005078	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
NaturalGas Unmitigated	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	26218.2	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Total		**0.2828**	**2.5704**	**2.1592**	**0.0154**		**0.1954**	**0.1954**		**0.1954**	**0.1954**		**3,084.4967**	**3,084.4967**	**0.0591**	**0.0566**	**3,102.8263**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	26.2182	0.2828	2.5704	2.1592	0.0154		0.1954	0.1954		0.1954	0.1954		3,084.4967	3,084.4967	0.0591	0.0566	3,102.8263
Total		**0.2828**	**2.5704**	**2.1592**	**0.0154**		**0.1954**	**0.1954**		**0.1954**	**0.1954**		**3,084.4967**	**3,084.4967**	**0.0591**	**0.0566**	**3,102.8263**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Unmitigated	11.8163	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0600e-003	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Total	**11.8163**	**5.0000e-004**	**0.0542**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1157**	**0.1157**	**3.1000e-004**		**0.1234**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	1.3428					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	10.4685					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.0600e-003	5.0000e-004	0.0542	0.0000		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		0.1157	0.1157	3.1000e-004		0.1234
Total	**11.8163**	**5.0000e-004**	**0.0542**	**0.0000**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**		**0.1157**	**0.1157**	**3.1000e-004**		**0.1234**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

Project Health Risk Assessment

Health Risk Assessment

13131 Los Angeles Street Industrial Project

Irwindale, California

Prepared For:

Community Development Department, Planning Division
5050 North Irwindale Avenue
Irwindale, California

December 2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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APPENDICES

Appendix A – Health Risk Calculations and AERMOD Outputs

LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ASF	Age sensitivity factor
ATCM	Air Toxic Control Measure
Basin	South Coast Air Basin
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
DOORS	Diesel Off-Road Reporting System
DPM	Diesel Particulate Matter
EMFAC	EMission FACtor model
FAH	Fraction of time at home

LIST OF ACRONYMS AND ABBREVIATIONS

FCAA	federal Clean Air Act
HAP	Hazardous Air Pollutants
HRA	Health Risk Assessment
kg	Kilogram
MSAT	Mobile Source Air Toxic
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NO_X	Oxides of Nitrogen
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
PERP	Portable Equipment Registration Program
PM	Particulate matter
PM_{10}	Particulate matter less than 10 microns in diameter
Project	13131 Los Angeles Street Industrial Project
REL	Reference Exposure Level
Risk Reduction Plan	Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles
SCAQMD	South Coast Air Quality Management District
SRA	Source receptor area
TACs	Toxic Air Contaminants
USEPA	U.S. Environmental Protection Agency
$\mu g/m^3$	Micrograms per cubic meter

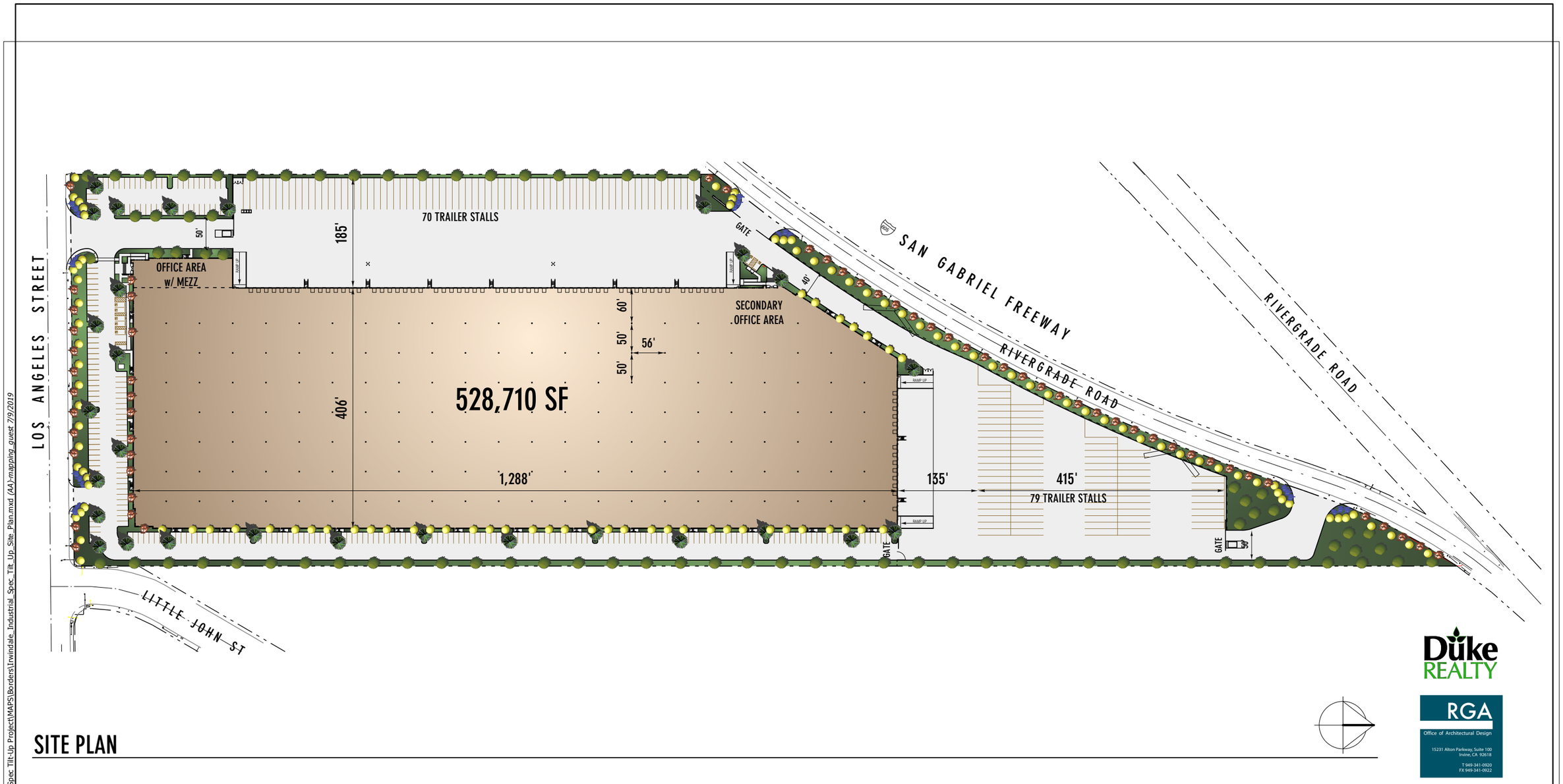
1.0 INTRODUCTION

This report evaluates the potential health risks associated with the 13131 Los Angeles Street Industrial Project (Project) proposed in Irwindale, California. The purpose of this Health Risk Assessment (HRA) is to evaluate potential health risks associated with Toxic Air Contaminants (TAC) including Diesel Particulate Matter (DPM) resulting from the implementation of the proposed Project (Project). This Health Risk Assessment was prepared in accordance with the requirements of the South Coast Air Quality Management District (SCAQMD) and guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to determine if health risks are likely to occur from the proposed Project. Further, this assessment was prepared in consideration of the Notice of Preparation comment letters received from both the SCAQMD and California Air Resources Board (CARB) as presented in Appendix A of the Draft EIR prepared for the Project. Technical data is included as see Appendix A, *Dispersion Modeling Data*.

1.1 Project Description and Location

The Project site is located in the City of Irwindale, located in central Los Angeles County. The Project site is an ±24.88-acre lot located along Rivergrade Road and Los Angeles Street. The irregular shaped site is generally bound by Interstate 605 to the north and west, industrial uses and residences located in the City of Baldwin Park to the east, and Los Angeles Street to the south. The Project is proposing a 528,710 square foot concrete tilt-up building that will be used for industrial purposes (see Figure 1. *Site Plan*). The site has been previously developed as an industrial use and is currently occupied with multiple buildings proposed from demolition.

The Project site is designated by the City of Irwindale General Plan as "Industrial/Business Park". According to the General Plan, the Industrial/Business Park designation allows for office, manufacturing, and warehouse uses, including commercial manufacturing, light manufacturing, and heavy manufacturing.



SITE PLAN

Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Borders\Irwindale_Industrial_Spec_Tilt_Up_Site_Plan.mxd (AA)-mapping_quest_7/9/2019

Map Date: 7/9/2019
Source: RGA

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Figure 1 Site Plan

2019-030 Irwindale Industrial Spec Tilt-Up Project

2.0 HEALTH RISK ASSESSMENT

2.1 Environmental Setting

2.1.1 Climate and Meteorology

The CARB divides the State into 15 air basins that share similar meteorological and topographical features. The Project site lies within the central portion of the South Coast Air Basin (Basin). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, in addition to the San Gorgonio Pass area in Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

Climate

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. The climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as manmade influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin. These factors along with applicable regulations are discussed below.

The average annual temperature varies little throughout the Basin, averaging 75°F. However, with a less-pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures over 100°F in recent years.

Meteorology

Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically nine to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

A temperature inversion is defined as an increase in temperature with height, or to the layer within which such an increase occurs. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities.

Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Inversions are usually lower before sunrise than during the day. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of ozone (O_3) observed during summer months in the Basin. Smog in southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The area in which the Project is located offers clear skies and sunshine, yet is still susceptible to air inversions. These inversions trap a layer of stagnant air near the ground, where it is then further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources.

Toxic Air Contaminants

TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Hazardous Air Pollutants (HAPs) is a term used by the federal Clean Air Act (FCAA) that includes a variety of pollutants generated or emitted by industrial production activities. Identified as TACs under the California Clean Air Act (CCAA), 10 have been singled out through ambient air quality data as being the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. CARB provides emission inventories for only the larger air basins.

TACs do not have ambient air quality standards because no safe levels of TACs can be determined. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) apply to facilities that use, produce, or emit toxic chemicals. Facilities subject to the toxic emission inventory requirements of the act must prepare and submit toxic emission inventory plans and reports, and periodically update those reports.

Toxic contaminants often result from fugitive emissions during fuel storage and transfer activities and from leaking valves and pipes. For example, the electronics industry, including semiconductor manufacturing, uses highly toxic chlorinated solvents in semiconductor production processes. Sources of air toxics go beyond industry, however. Automobile exhaust also contains toxic air pollutants such as benzene and 1,3-butadiene. The following are health effects related to common TACs:

Acetaldehyde

Acetaldehyde is directly emitted into the atmosphere and is also formed in the atmosphere from photochemical oxidation. Acetaldehyde is generated as exhaust from mobile sources and fuel

combustion from stationary internal combustion engines, boilers, and process heaters. Acetaldehyde is a carcinogen that can also cause chronic non-cancer toxicity in the respiratory system. Symptoms of chronic intoxication of acetaldehyde in humans resemble those of alcoholism. The primary short-term effect of inhalation exposure to acetaldehyde is irritation of the eyes, skin, and respiratory tract. At higher exposure levels, erythematic, coughing, and pulmonary edema, and necrosis may also occur.

Benzene

Approximately 84 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. Benzene is highly carcinogenic and occurs throughout California. Benzene also has non-cancer health effects. Brief inhalation exposure to high concentrations can cause central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and unconsciousness. Ingestion of large amounts of benzene may result in vomiting, dizziness, and convulsions. Exposure to liquid and vapor may irritate the skin, eyes, and upper respiratory tract. Redness and blisters may result from dermal exposure to benzene. Chronic inhalation of certain levels of benzene causes blood disorders because benzene specifically affects bone marrow, which produces blood cells. Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene.

1,3-Butadiene

The majority of 1,3-butadiene emissions comes from incomplete combustion of gasoline and diesel fuels. 1,3-butadiene has been identified as a carcinogen in California. Butadiene vapors at elevated levels cause neurological effects such as blurred vision, fatigue, headache, and vertigo. Dermal exposure to 1,3-butadiene causes a sensation of cold, followed by a burning sensation, and can lead to frostbite. Chronic exposure to 1,3-butadiene via inhalation has been shown to result in an increase in cardiovascular diseases, and increase in the occurrence of leukemia, and an increased incidence of respiratory, bladder, stomach, and lymphatic-hematopoietic cancers.

Carbon Tetrachloride

The primary sources of carbon tetrachloride in California include chemical manufacturing facilities and petroleum refineries. Carbon tetrachloride has been identified as a probable human carcinogen in California. Carbon tetrachloride is also a central nervous system depressant and mild eye and respiratory tract irritant. Acute inhalation and oral exposures to high levels of carbon tetrachloride can damage the liver and kidneys in humans and animals. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting.

Chromium, Hexavalent

Chromium planting and other metal finishing processes are the primary sources of hexavalent chromium emissions in California. California has identified hexavalent chromium as a carcinogen. Exposure to

inhaled hexavalent chromium may result in lung cancer, and short-term exposure symptoms may include renal toxicity, gastrointestinal hemorrhage, and intravascular hemolysis.

Inhalation exposure of hexavalent exposure targets the respiratory tract. Exposure to very high concentrations of hexavalent chromium can include burns, effects on the respiratory tract such as perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, asthma, and nasal itching and soreness. Chronic human exposure to high levels of hexavalent chromium by inhalation or oral exposure may adversely affect the liver, kidney, and gastrointestinal and immune system.

Para-Dichlorobenzene

The primary sources of para-dichlorobenzene include consumer products such as non-aerosol insect repellents and solid air fresheners. These sources contribute 99 percent of statewide para-dichlorobenzene emissions. In California, para-dichlorobenzene has been identified as a carcinogen. Acute exposure to 1,4-dichlorobenzene via inhalation in humans results in irritation to the eyes, skin, and throat. In addition, long-term inhalation exposure may affect the liver, skin, and central nervous system.

Formaldehyde

Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Formaldehyde is a product of incomplete combustion, and one of the primary sources of formaldehyde is vehicular exhaust. Formaldehyde can also be found in many consumer products as an antimicrobial agent and is used in fumigants and soil disinfectants.

Acute formaldehyde inhalation exposure can result in eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Chronic inhalation exposure to formaldehyde has been associated with respiratory symptoms and eye, nose, and throat irritation. In California, formaldehyde has been identified as a carcinogen, and occupational studies have shown associations between exposure to formaldehyde and increased incidence of lung and nasopharyngeal cancer.

Methylene Chloride

Methylene chloride is a solvent used in paint stripping operations and as a blowing and cleaning agent in the manufacture of polyurethane foam and plastic. Paint removers account for the largest use of methylene chloride in California. Inhalation exposure to extremely high levels of methylene chloride can be fatal to humans. Acute inhalation exposure to high levels of methylene chloride can result in decreased visual, auditory, and psychomotor functions, but these effects are reversible once exposure ceases. Methylene chloride also irritates the nose and throat at high concentrations. The major effects from chronic inhalation exposure to methylene chloride are headaches, dizziness, nausea, and memory loss. Chronic exposure can also lead to bone marrow, hepatic, and renal toxicity. California considers methylene chloride to be carcinogenic.

Perchloroethylene

Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos and laboratory solvents. Perchloroethylene vapors are irritating to the eyes and respiratory tract and chronic exposure can result in liver toxicity, kidney dysfunction, and neurological disorders. California identifies perchloroethylene as a carcinogen.

Diesel Particulate Matter

DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about five percent of total DPM. It should be noted that CARB has developed several plans and programs to reduce diesel emissions such as the Diesel Risk Reduction Plan, the Statewide Portable Equipment Registration Program (PERP), and the Diesel Off-Road Reporting System (DOORS). The PERP and DOORS programs allow owners or operators of portable engines and certain other types of equipment can register their units in order to operate their equipment throughout California without having to obtain individual permits from local air districts.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by OEHHA. CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel particle levels measured in California's air in 2000 could cause 540 "excess" cancers in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from diesel exhaust similar to those developed by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine particulate pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous

studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, diesel exhaust particles have been identified as a carcinogen.

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Table 1 lists the distances and locations of sensitive receptors within the Project vicinity. The distances depicted in Table 1 are based on the distance from the Project site to the vicinity sensitive receptors.

Table 1. Nearest Sensitive Receptors

Type	Distance from Project Site at the Nearest (feet)1	Direction from Project Site	Location
Residential Neighborhood	670	East	East of Little John Street
School (Walnut Elementary School)	2,115	Northeast	East of Center Street

Source: [1]Google Earth 2019

2.2 Regulatory Framework

2.2.1 Federal

Clean Air Act

The FCAA was amended in 1990 to address a large number of air pollutants that are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects. 188 specific pollutants and chemical groups were initially identified as HAPs, and the list has been modified over time. The FCAA Amendments included new regulatory programs to control acid deposition and for the issuance of stationary source operating permits.

In 2001, the U.S. Environmental Protection Agency (USEPA) issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being HAPs that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health and included benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and DPM. More recently, the USEPA issued a second MSAT Rule in February 2007, which generally supported the findings in the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. Unlike the

criteria pollutants, toxics do not have National Ambient Air Quality Standards (NAAQS) making evaluation of their impacts more subjective.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs) were incorporated into a greatly expanded program for controlling toxic air pollutants. The provisions for attainment and maintenance of the NAAQS were substantially modified and expanded. Other revisions included provisions regarding stratospheric ozone protection, increased enforcement authority, and expanded research programs.

Section 112 of the FCAA Amendments governs the federal control program for HAPs. NESHAPs are issued to limit the release of specified HAPs from specific industrial sectors. These standards are technology-based, meaning that they represent the best available control technology an industrial sector could afford. The level of emissions controls required by NESHAPs are not based on health risk considerations because allowable releases and resulting concentrations have not been determined to be safe for the general public. The FCAA does not establish air quality standards for HAPs that define legally acceptable concentrations of these pollutants in ambient air.

2.2.2 State

California Air Resources Board

CARB's statewide comprehensive air toxics program was established in 1983 with AB 1807 the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Diesel Risk Reduction Plan

The identification of DPM as a TAC in 1998 led CARB to adopt the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Risk Reduction Plan) in October 2000. The Risk Reduction Plan's goals include an 85 percent reduction in DPM by 2020 from the 2000 baseline (CARB 2000). The Risk Reduction Plan includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles

On December 12, 2008, CARB approved the Truck and Bus Regulation to significantly reduce particulate matter (PM) and oxides of nitrogen (NO_X) emissions from existing diesel vehicles operating in California. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks must be retrofitted with PM filters beginning January 1, 2012, and older trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses would need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. Small fleets with three or fewer diesel trucks can delay compliance for heavier trucks by reporting and there are a number of extensions for low-mileage construction trucks, early PM filter retrofits, adding cleaner vehicles, and other situations. Privately and publicly owned school buses have different requirements.

Heavy-Duty Vehicle Idling Emission Reduction Program

The purpose of the CARB ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling is to reduce public exposure to diesel particulate matter and criteria pollutants by limiting the idling of diesel-fueled commercial vehicles.[1] The driver of any vehicle subject to this ATCM is prohibited from idling the vehicle's primary diesel engine for greater than five minutes at any location and is prohibited from idling a diesel-fueled auxiliary power system for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

CARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, beginning in 2008, would require that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged.

2.2.3 Local

South Coast Air Quality Management District

The CCAA provides the SCAQMD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example would be the motor vehicles at an intersection, a mall, and on highways. As a state agency, CARB regulates motor vehicles and fuels for their emissions.

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1 The *ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling* is codified in Title 13 of the California Code of Regulations, Chapter 10, Section 2485.

The *Air Toxics Control Plan* (March 2000, revised March 26, 2004) is a planning document designed to examine the overall direction of the SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within the SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be periodically reported to the Board.

The SCAQMD has conducted an in-depth analysis of the toxic air contaminants and their resulting health risks for all of Southern California. This study, the *Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV,"* shows that cancer risk has decreased more than 50 percent between MATES III (2008) and MATES IV (2015).

MATES-IV is the most comprehensive dataset documenting the ambient air toxic levels and health risks associated with the Basin emissions. Therefore, MATES-IV study represents the baseline health risk for a cumulative analysis. MATES-IV estimates the average excess cancer risk level from exposure to TACs is less than 400 in one million basin-wide. These model estimates were based on monitoring data collected at 10 fixed sites within the Basin. None of the fixed monitoring sites are within the local area of the Project site. However, MATES-IV has extrapolated the excess cancer risk levels throughout the basin by modeling the specific grids. MATES-IV modeling predicted an excess cancer risk of 427 in one million for the Project area. DPM is included in this cancer risk along with all other TAC sources. DPM accounts for 68 percent of the total risk shown in MATES-IV.

2.3 Health Risk and Hazard Assessment

2.3.1 Thresholds of Significance

In order to determine whether or not a proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of air toxics generated and the associated impacts on factors that affect air quality. While the final determination of significance thresholds is within the purview of the lead agency pursuant to the state CEQA Guidelines, the SCAQMD recommends that the following air pollution thresholds be used by lead agencies in determining whether the proposed Project is significant. If the lead agency finds that the proposed Project has the potential to exceed the air pollution thresholds, the Project should be considered significant. The thresholds for air toxic emissions are as follows.

- Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of one in one million.

Cancer risk is expressed in terms of expected incremental incidence per million population. The SCAQMD has established an incidence rate of 10 persons per million as the maximum acceptable incremental cancer risk due to DPM exposure. This threshold serves to determine whether or not a given project has a

potentially significant development-specific and cumulative impact. The 10-in-one-million standard is a very health-protective significance threshold. A risk level of 10 in one million implies a likelihood that up to 10 persons out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these air toxics. To put this risk in perspective, the risk of dying from accidental drowning is 1,000 in a million, which is 100 times more than the SCAQMD's threshold of 10 in one million.

The SCAQMD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant.

2.3.2 Methodology

This HRA evaluates potential health risks associated with the emission of DPM resulting from the implementation of the Proposed Project. As previously described, CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

The air dispersion modeling for the HRA was performed using the USEPA AERMOD dispersion model. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources (not a factor in this case). AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Surface and upper air meteorological data provided by the SCAQMD for Azusa Meteorological Station was selected as being the most representative meteorology based on proximity to the Project site as well as being within the same SCAQMD source receptor area (SRA). The SCAQMD divides the Basin into 38 SRAs to forecast and report air quality. Both the Project site and the Azusa Meteorological Station are located in SCAQMD SRA 9, known as the East San Gabriel Valley.

Emissions sources in the model include two area sources to represent the loading docks located at two different locations on the Project site (see Figure 1). Additionally, emissions sources in the model include a volume line source (comprised of 42 volume sources) representing the onsite truck circulation at the Project site, and a volume line source (comprised of 28 volume sources) representing the offsite truck circulation extending approximately 1,500 feet to the west of the Project site along Los Angeles Street, as well as approximately 2,550 feet to the east of the Project site along Los Angeles Street. The separated line 2W volume source was employed consistent with the recommendations of the California Air Pollution Control Officers Association (CAPCOA) Health Risk Assessments for Proposed Land Use Projects (2009) document (page 54 of Attachment 1, *Technical Modeling Guidance*), which provides guidance for modeling roads/line sources in AERMOD. This guidance is necessary since AERMOD does not have a pollutant source option directly specific to mobile sources. According to CAPCOA, the best method for

modeling emissions from travelling truck vehicles in AERMOD is to use a series of multiple volume sources. 2W volume sources involves a series of volume sources to approximate a line source. Using the width of the road as the length of the side of a single volume source, the number of volume sources along the length of the road is determined by dividing the length of the road by 2W. The number of volume sources is then determined in order to replicate a mobile source of pollutants traveling a roadway within the AERMOD software. This methodology is consistent with the USEPA *AERMOD User's Guide*. AERMOD can be used to predict the concentrations of pollutants emitted from vehicles on roads. The maximum daily exhaust emissions for all diesel equipment was used to produce an emission rate in terms of grams per second per square meter. Emissions from heavy trucks were assigned a release height of 3.65 meters in order to provide a conservative analysis (i.e., using a higher release height would result in a smaller impact by allowing pollutants to disperse before they affect a receptor).

The estimated number of daily heavy-duty trucks was obtained from KOA (2019). It is noted that the SCAQMD Notice of Preparation comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 square feet of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD.

The model was run to obtain the peak 24-hour and annual average concentration in micrograms per cubic meter [$\mu g/m^3$] at nearby sensitive receptors. According to the SCAQMD's Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588), air dispersion modeling is required to estimate (a) annual average concentrations to calculate the Maximum Individual Cancer Risk, the maximum chronic hazard index, the zones of impact and (b) peak hourly concentrations to calculate the health impact from substances with acute non-cancer health effects. To achieve these goals, the receptor grid should extend to cover the zone of impact. To achieve these goals, the receptor grid in the model begins at the facility fence line and extends to cover the zone of impact, which is the residential community (consisting of several schools) to the east. Per SCAQMD recommendations, in order "to identify the maximum impacted receptors (i.e., peak cancer risk and peak hazard indices) a grid spacing of 75 meters is used" (SCAQMD recommends that a receptor grid be spaced at 75 meters when analyzing the effects of a facility spanning 25 to 100 acres). The analysis does not miss potential peak concentration levels at any sensitive receptors as the potential peak concentration levels at sensitive receptors are identified through the examination of pollutant concentration contour mapping. Where multiple concentration levels are identified within a single receptor grid, the highest concentration level identified is used for the purpose of determining the health risk within that receptor grid.

Note that the concentration estimates developed using this methodology are considered conservative and are not a specific prediction of the actual concentrations that would occur as a result of the Project at any one point in time. Actual 24-hour and annual average and concentrations are dependent on many variables, particularly the number and type of equipment working at specific distances during time periods of adverse meteorology.

A health risk computation was performed to determine the risk of developing an excess cancer risk calculated on a 70-year lifetime basis, 30-year, and 9-year exposure scenarios. The chronic and carcinogenic health risk calculations are based on the standardized equations contained in the OEHHA Guidance Manual (2015). Only the risk associated with operations of the Proposed Project was assessed as risk associated with Project construction emissions are analyzed in the Project *Air Quality and Greenhouse Gas Assessment* prepared by ECORP.

Based on the OEHHA methodology, the residential inhalation cancer risk from the annual average DPM concentrations are calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home, and the exposure duration divided by averaging time, to yield the excess cancer risk. These factors are discussed in more detail below. It is important to note that exposure duration is based on continual heavy truck operations at the Project site. Cancer risk must be calculated separately for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kilogram [kg] body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Exposure through inhalation ($Dose_{air}$) are a function of the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so $Dose_{air}$ is calculated for each of these age groups, third trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\mathbf{Dose_{air} = (C_{air} * \{BR/BW\} * A * EF * 10^{-6})}$$

Where:

$Dose_{air}$	=	dose through inhalation (mg/kg/day)
C_{air}	=	air concentration (µg/m^3) from air dispersion model
{BR/BW}	=	daily breathing rate normalized to body weight (L/kg body weight – day) (225 L\kg BW-day for 3rd Trimester, 658 L/kg BW-day for 0<2 years, 535 L/kg BW-day for 2<9 years, 452 L/kg BW-day for 2<16 years, 210 L/kg BW-day for 16<30 years, and 185 L/kg BW-day 16<70 years)
A	=	Inhalation absorption factor (unitless [1])
EF	=	exposure frequency (unitless), days/365 days (0.96 [approximately 350 days per year])
10^{-6}	=	conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to take into account the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age two years, an ASF of 3 for ages two through 15 years to account for potential increased sensitivity to carcinogens during childhood, and an ASF of one for ages 16 through 70 years.

Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. OEHHA recommends the following FAH values: from the third trimester to

age <2 years, 85 percent of time is spent at home; from age two through <16 years, 72 percent of time is spent at home; from age 16 years and greater, 73 percent of time is spent at home.

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

$$\mathbf{Risk_{inh\text{-}res} = (Dose_{air} * CPH * ASF * ED/AT * FAH)}$$

Where:

$Risk_{inh\text{-}res}$	=	residential inhalation cancer risk (potential chances per million)
$Dose_{air}$	=	daily dose through inhalation (mg/kg-day)
CPF	=	inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	age sensitivity factor for a specified age group (unitless)
ED	=	exposure duration (in years) for a specified age group (0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70)
AT	=	averaging time of lifetime cancer risk (years)
FAH	=	fraction of time spent at home (unitless)

Chronic Non-Cancer Hazard

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

$$\mathbf{Hazard\ Quotient = Ci/RELi}$$

Where:

Ci	=	Concentration in the air of substance i (annual average concentration in µg/m^3)
RELi	=	Chronic noncancer Reference Exposure Level for substance i (µg/m^3)

Acute Non-Cancer Hazard

The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts. The equation is as follows:

$$\mathbf{Acute\ HQ = Maximum\ Hourly\ Air\ Concentration\ (\mu g/m^3)\ /\ Acute\ REL\ (\mu g/m^3)}$$

2.3.3 Impact Analysis

Project Risk and Hazard Assessment

CARB identified DPM as a TAC in 1998. Mobile sources (including trucks, buses, automobiles, trains, ships, and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Diesel

exhaust is composed of two phases, either gas or particulate; both contribute to the risk. The gas phase is composed of many of the urban HAPs, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particulate phase has many different types that can be classified by size or composition. The sizes of diesel particulates of greatest health concern are fine and ultrafine particles. These particles may be composed of elemental carbon with adsorbed[2] compounds such as organics, sulfates, nitrates, metals, and other trace elements. Diesel exhaust is emitted from a broad range of on- and off-road diesel engines. As the Project would accommodate daily visits from heavy-duty diesel trucks during operations, an analysis of DPM was performed using the USEPA-approved AERMOD model.

Non-Carcinogenic Hazards

The significance thresholds for TAC exposure requires an evaluation of non-cancer risk stated in terms of a hazard index. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts.

An acute or chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the acute or chronic exposure by the reference exposure level. The highest maximum chronic and acute hazard index at a sensitive receptor associated with DPM emissions from the Project would be 0.0013 and 0.0347, respectively. This concentration would occur at the residential neighborhood located east of the Project site, specifically at the western cul-de-sac of Benbow Street. Therefore, non-carcinogenic hazards are calculated to be within acceptable limits.

Carcinogenic Risk

Vehicle DPM emissions were estimated using emission factors for course particulate matter less than 10 microns in diameter (PM_{10}) generated with the 2017 version of the EMission FACtor model (EMFAC) developed by CARB. EMFAC 2017 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources. The most recent version of this model, EMFAC 2017, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled by speed, and number of starts per day. The most important improvement in EMFAC 2017 is the integration of the new data and methods to estimate emissions from diesel trucks and buses. The model includes the emissions benefits of the truck and bus rule and the previously adopted rules for other on-road diesel equipment.

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2017 for vehicles in the Basin within Los Angeles County. EMFAC generates emission factors in terms of grams of

[2]This term is specifically used for gases.

pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of vehicle speed, temperature, and relative humidity. The model was run for speeds traveled on and within the vicinity of the Project site. The vehicle travel speeds for each segment modeled are summarized below.

- Idling (15 minutes per truck) – onsite loading/unloading; and
- five miles per hour – onsite vehicle movement including driving and maneuvering; and
- 35 miles per hour – offsite vehicle movement including driving and maneuvering.

The average PM_{10} emission factors for heavy trucks were calculated based on the annual average emission factors for various exposure periods associated with assumptions for evaluating exposure over three different periods (i.e., 70-, 30-, and 9-year exposure scenarios). The posted speed limit on Los Angeles Street is 40 miles per hour. The average PM_{10} emission factor for heavy trucks traveling 35 miles per hour is greater than those traveling 40 miles per hour. Thus, the use of an emissions factor for trucks traveling 35 miles per hour is conservative.

Based on the AERMOD outputs, the expected annual average diesel PM_{10} emission concentrations at the most exposed sensitive receptor (located at the western cul-de-sac of Benbow Street) resulting from operation of the Project (557 daily heavy-duty truck trips) would be 0.007 $\mu g/m^3$ at the greatest.

Cancer risk calculations for residences are based on 70-, 30-, and 9-year exposure periods while schools are based on a 9-year exposure period. The calculated carcinogenic risk at the sensitive receptor as a result of the Project is depicted in Table 2. As shown, impacts related to cancer risk from heavy trucks would be less than significant at the nearest residences and nearest school.

Table 2. Maximum Operational Health Risk at the Project Vicinity Residential Neighborhoods

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds SCAQMD Significance Threshold?
Residences to the East with Highest Pollutant Concentrations			
70-Year Exposure	3.24	*10*	No
30-Year Exposure	2.73	*10*	No
9-Year Exposure	1.96	*10*	No
Walnut Elementary School to the Northeast			
9-Year Exposure	1.02	*10*	**No**

Source: Refer to **Attachment A** for Model Data Outputs.
Notes: The elementary school is only analyzed for nine years of exposure as students are not expected to attend school beyond those years.

In conclusion, non-carcinogenic hazards resulting from the proposed Project are calculated to be within acceptable limits. Additionally, impacts related to cancer risk from heavy trucks would be less than significant at the nearest residences and nearest school. Therefore, impacts related to health risk from the Project would be less than significant.

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APPENDIX A

Health Risk Calculations and AERMOD Outputs

Health Risk Calculations

Irwindale Industrial Project

DPM Emissions Calculations

On-Site Truck Movement			Avg Speed (mph)	Emission Factor (g/mi)	Daily Truck Trips (round trips)	length (mi)	g/day	g/sec	# sources	EVS
Project Trucks			5	0.063650	557	0.8	2.84E+01	3.28E-04	42	7.82E-06
										7.82E-06

Off-Site Truck Movement			Avg Speed (mph)	Emission Factor (g/mi)	Daily Truck Trips (round trips)	length (mi)	g/day	g/sec		
Project Trucks			35	0.015929	557	0.8	7.10E+00	8.22E-05	28	2.93E-06
										2.93E-06

On-Site Vehicle Idle Emissions		Emission Factor (g/veh/day)	Idling Time (min)	Idling Time (hrs/day)	Daily Trucks	Release Height Above Ground (m)	g/day	g/sec		
Project Trucks		0.004595	15	1.04E-02	279	3.65	1.34E-02	1.55E-07	4	3.86E-08

Sources:

EMFAC2017. PM10 Emission Factors are derived from the Year 2021 Heavy-Duty Truck Fleet Mix

Notes:

The Project will accommodate 557 inbound and outbound truck trips daily. Thus each visting truck results in 2 trips, equating to 279 idling events daily.

DPM Health Risk at Highest Pollutant Concentration Residence East Neighborhood

Risk Calculations

1 Hour Avg Concentration:	0.063
24 Hour Avg Concentration:	0.019
Annual Avg Concentration:	0.007

Cancer Risk

	3rd trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
DOSEair = (Cair*(BR/BW)*A*EF*10^{-6})	1.42397E-06	4.16433E-06	3.38589E-06	2.8606E-06	1.32904E-06	1.1708E-06
Risk = DOSEair * CPF * ASF * ED/AT * FAH	4.75505E-08	1.11247E-06	8.04488E-07	1.35936E-06	2.134440E-07	7.2527E-07

		Risk	in one million
Cancer Risk:	70-year exposure	3.24E-06	**3.24**
	30-year exposure	2.73E-06	**2.73**
	9-year exposure	1.96E-06	**1.96**
Threshold:			10 in one million

	DOSEair		mg/kg-d	Dose through inhalation
	CPF	1.1	$(mg/kg/day)^{-1}$	Cancer Potency Factor for DPM
BR/BW	BR/BW (3rd trimester)	225	L/kg bodyweight-day	Daily Breathing rate normalized to body weight
	BR/BW (0 < 2 years)	658		
	BR/BW (2 < 9 years)	535		
	BR/BW (2 < 16 years)	452		
	BR/BW (16 < 30 years)	210		
	BR/BW (16 < 70 years)	185		
	10^{-6}	1.00E-06		Micrograms to milligrams conversions, liters to cubic meters conversion
	Cair	0.0066	ug/m^3	Concentration in air (ug/m^3), modeled annual average concentration
	A	1		Inhalation absorption factor
	EF	0.96	days/year	Exposure frequency (days/year)
ED	ED (3rd trimester)	0.25	years	Exposure duration (years)
	ED (0 < 2 years)	2		
	ED (2 < 9 years)	7		
	ED (2 < 16, 16 < 30 years)	14		
	ED (16 - 70 years)	54		
	AT	70	years	Averaging time period over which exposure is averaged
ASF	ASF (3rd trimester - 2 years)	10		Age Sensitivity Factor
	ASF (2 - 16 years)	3		
	ASF (16 - 70 years)	1		
FAH	FAH (3rd trimester - 2 years)	0.85		Fraction of time spent at home (unitless)
	FAH (2 - 16 years)	0.72		
	FAH (16 - 70 years)	0.73		

Chronic Noncancer Hazard

Threshold: 1

Hazard Quotient = C_i/REL_i

HQ = **1.32E-03**

C_i	6.60E-03	Concentration (annual average)
REL_i	5	Reference Exposure Level

Acute NonCancer Hazard

Threshold: 1

Acute HQ = Maximum Hourly Concentration/Acute REL

Acute HQ = **3.47E-02**

Max Hourly	6.60E-03
Acute REL (Acrolein)	0.19

DPM Health Risk at Walnut Elementary School

Risk Calculations

1 Hour Avg Concentration:	0.029
24 Hour Avg Concentration:	0.010
Annual Avg Concentration:	0.003

Cancer Risk

	3rd trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
DOSEair = (Cair*(BR/BW)*A*EF*10^{-6})	5.82534E-07	1.70359E-06	1.38514E-06	1.17025E-06	5.43699E-07	4.7897E-07
Risk = DOSEair * CPF * ASF * ED/AT * FAH	2.28853E-08	5.35414E-07	4.57095E-07	7.72363E-07	1.196137E-07	4.0644E-07

		Risk	in one million
Cancer Risk:	9-year exposure	1.02E-06	**1.02**
Threshold:			10 in one million

	DOSEair		mg/kg-d	Dose through inhalation
	CPF	1.1	$(mg/kg/day)^{-1}$	Cancer Potency Factor for DPM
BR/BW	BR/BW (3rd trimester)	225	L/kg bodyweight-day	Daily Breathing rate normalized to body weight
	BR/BW (0 < 2 years)	658		
	BR/BW (2 < 9 years)	535		
	BR/BW (2 < 16 years)	452		
	BR/BW (16 < 30 years)	210		
	BR/BW (16 < 70 years)	185		
	10^{-6}	1.00E-06		Micrograms to milligrams conversions, liters to cubic meters conversion
	Cair	0.0027	ug/m^3	Concentration in air (ug/m^3), modeled annual average concentration
	A	1		Inhalation absorption factor
	EF	0.96	days/year	Exposure frequency (days/year)
ED	ED (3rd trimester)	0.25	years	Exposure duration (years)
	ED (0 < 2 years)	2		
	ED (2 < 9 years)	7		
	ED (2 < 16, 16 < 30 years)	14		
	ED (16 - 70 years)	54		
	AT	70	years	Averaging time period over which exposure is averaged
ASF	ASF (3rd trimester - 2 years)	10		Age Sensitivity Factor
	ASF (2 - 16 years)	3		
	ASF (16 - 70 years)	1		
FAH	FAH (3rd trimester - 2 years)	1		Fraction of time spent at home (unitless)
	FAH (2 - 16 years)	1		
	FAH (16 - 70 years)	1		

Chronic Noncancer Hazard

Threshold: 1

Hazard Quotient = C_i/REL_i

HQ = **5.40E-04**

C_i 2.70E-03 Concentration (annual average)

REL_i 5 Reference Exposure Level

Acute NonCancer Hazard

Threshold: 1

Acute HQ = Maximum Hourly Concentration/Acute REL

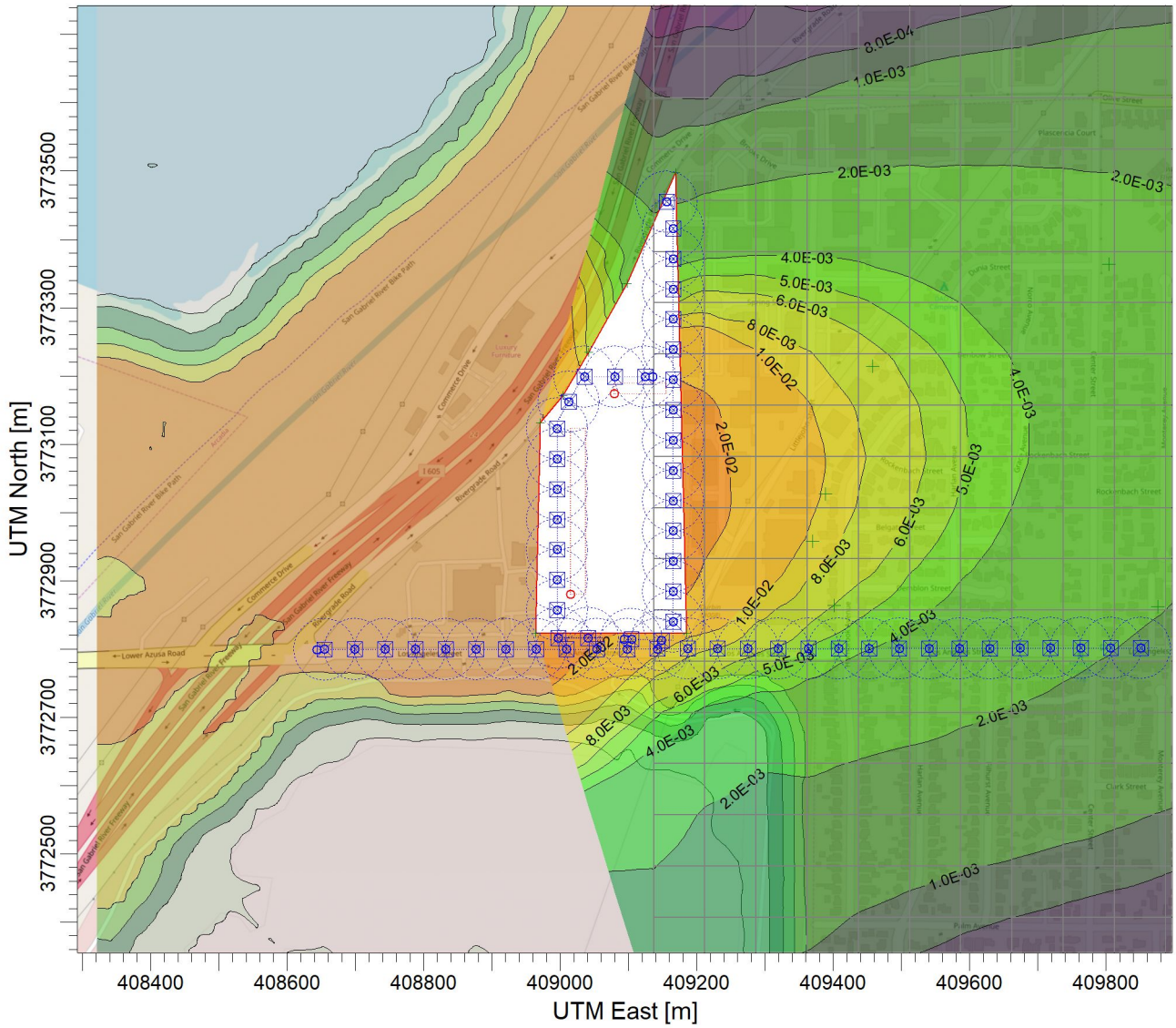
Acute HQ = **1.42E-02**

Max Hourly 2.70E-03

Acute REL (Acrolein) 0.19

PROJECT TITLE:

C:\Lakes\AERMOD View\Irwindale Industrial\Irwindale Industrial.isc



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

Max: 4.8E-02 [ug/m^3] at (409137.19, 3773157.01)

4.8E-04 5.0E-04 6.0E-04 8.0E-04 1.0E-03 2.0E-03 4.0E-03 5.0E-03 6.0E-03 8.0E-03 1.0E-02 2.0E-02 4.0E-02 4.8E-02

COMMENTS:	SOURCES: **5**	COMPANY NAME:	
	RECEPTORS: **265**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:10,091 0 0.3 km	
	MAX: **4.8E-02 ug/m^3**	DATE: **11/22/2019**	PROJECT NO.:

Control Pathway

AERMOD

Dispersion Options

Titles

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Dispersion Options

- [x] Regulatory Default
- [ ] Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

- [x] Concentration
- [ ] Total Deposition (Dry & Wet)
- [ ] Dry Deposition
- [ ] Wet Deposition

Plume Depletion

- [ ] Dry Removal
- [ ] Wet Removal

Output Warnings

- [ ] No Output Warnings
- [ ] Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM10

Averaging Time Options

Hours	1	2	3	4	6	8	12	24
	[x]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[x]

- [ ] Month
- [ ] Period
- [x] Annual

Exponential Decay

Half-life of 4 hrs will be used
Option not available

Terrain Height Options

- [ ] Flat
- [x] Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

- [ ] Yes
- [x] No

Default Height = 0.00 m

Control Pathway

Optional Files

- [ ] Re-Start File
- [ ] Init File
- [ ] Multi-Year Analyses
- [ ] Event Input File
- [x] Error Listing File

Detailed Error Listing File

Filename: Irwindale Industrial.err

Source Pathway - Source Inputs

AERMOD

Area Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Length of X Side [m]	Length of Y Side [m]	Orientation Angle from North [deg]	Initial Vertical Dim. [m]
AREA	AREA1	409079.00 Loading Dock 1	3773174.00	108.06	3.68	3.86E-8	76.20	15.00	0.00	
AREA	AREA2	409015.00 Loading Dock 2	3772880.00	106.56	3.68	1.16E-7	22.86	243.84	0.00	

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME
Source: SLINE2 (onsite circulation)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	7.82E-6		409093.52	3772814.46	105.58	3.65
			409165.57	3772812.46	105.40	3.65
			409165.57	3773448.92	110.05	3.65
			409153.56	3773456.93	109.94	3.65

Source Type: LINE VOLUME
Source: SLINE3 (onsite circulation)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	7.82E-6		409135.55	3773198.74	108.64	3.65
			409033.47	3773198.74	108.73	3.65
			408995.45	3773132.69	107.95	3.65
			408995.45	3772822.46	105.69	3.65
			408993.45	3772816.46	105.51	3.65
			409061.50	3772816.46	105.59	3.65

Source Type: LINE VOLUME
Source: SLINE4 (Offsite circulation)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	2.93E-6		408643.97	3772799.39	105.50	3.65
			409875.92	3772801.46	109.38	3.65

Source Pathway - Source Inputs

AERMOD

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000085	409104.59	3772814.15	105.58	3.65	4.60E-7	22.15		20.60	2.37
	L0000086	409148.87	3772812.92	105.49	3.65	4.60E-7	22.15		20.60	2.37
	L0000087	409165.57	3772840.05	106.12	3.65	4.60E-7	22.15		20.60	2.37
	L0000088	409165.57	3772884.35	107.22	3.65	4.60E-7	22.15		20.60	2.37
	L0000089	409165.57	3772928.65	107.27	3.65	4.60E-7	22.15		20.60	2.37
	L0000090	409165.57	3772972.95	107.37	3.65	4.60E-7	22.15		20.60	2.37
	L0000091	409165.57	3773017.25	107.58	3.65	4.60E-7	22.15		20.60	2.37
	L0000092	409165.57	3773061.55	107.70	3.65	4.60E-7	22.15		20.60	2.37
	L0000093	409165.57	3773105.85	107.84	3.65	4.60E-7	22.15		20.60	2.37
	L0000094	409165.57	3773150.15	108.20	3.65	4.60E-7	22.15		20.60	2.37
	L0000095	409165.57	3773194.45	108.94	3.65	4.60E-7	22.15		20.60	2.37
	L0000096	409165.57	3773238.75	109.62	3.65	4.60E-7	22.15		20.60	2.37
	L0000097	409165.57	3773283.05	109.67	3.65	4.60E-7	22.15		20.60	2.37
	L0000098	409165.57	3773327.35	109.72	3.65	4.60E-7	22.15		20.60	2.37
	L0000099	409165.57	3773371.65	109.75	3.65	4.60E-7	22.15		20.60	2.37
	L0000100	409165.57	3773415.95	109.98	3.65	4.60E-7	22.15		20.60	2.37
	L0000101	409156.15	3773455.21	110.03	3.65	4.60E-7	22.15		20.60	2.37

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000102	409124.47	3773198.74	108.64	3.65	6.02E-7	22.15		20.60	2.37
	L0000103	409080.17	3773198.74	109.07	3.65	6.02E-7	22.15		20.60	2.37
	L0000104	409035.87	3773198.74	108.72	3.65	6.02E-7	22.15		20.60	2.37
	L0000105	409012.57	3773162.43	108.52	3.65	6.02E-7	22.15		20.60	2.37
	L0000106	408995.45	3773122.70	107.90	3.65	6.02E-7	22.15		20.60	2.37

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000107	408995.45	3773078.40	107.39	3.65	6.02E-7	22.15		20.60	2.37
	L0000108	408995.45	3773034.10	107.17	3.65	6.02E-7	22.15		20.60	2.37
	L0000109	408995.45	3772989.80	106.92	3.65	6.02E-7	22.15		20.60	2.37
	L0000110	408995.45	3772945.50	106.54	3.65	6.02E-7	22.15		20.60	2.37
	L0000111	408995.45	3772901.20	106.47	3.65	6.02E-7	22.15		20.60	2.37
	L0000112	408995.45	3772856.90	106.23	3.65	6.02E-7	22.15		20.60	2.37
	L0000113	408996.97	3772816.46	105.58	3.65	6.02E-7	22.15		20.60	2.37
	L0000114	409041.27	3772816.46	106.38	3.65	6.02E-7	22.15		20.60	2.37

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000115	408655.04	3772799.41	105.43	3.65	1.05E-7	22.15		20.60	2.37
	L0000116	408699.34	3772799.49	105.18	3.65	1.05E-7	22.15		20.60	2.37
	L0000117	408743.64	3772799.56	105.04	3.65	1.05E-7	22.15		20.60	2.37
	L0000118	408787.94	3772799.64	105.06	3.65	1.05E-7	22.15		20.60	2.37
	L0000119	408832.24	3772799.71	105.21	3.65	1.05E-7	22.15		20.60	2.37
	L0000120	408876.54	3772799.78	105.26	3.65	1.05E-7	22.15		20.60	2.37
	L0000121	408920.84	3772799.86	105.32	3.65	1.05E-7	22.15		20.60	2.37
	L0000122	408965.14	3772799.93	105.46	3.65	1.05E-7	22.15		20.60	2.37
	L0000123	409009.44	3772800.01	105.48	3.65	1.05E-7	22.15		20.60	2.37
	L0000124	409053.74	3772800.08	105.34	3.65	1.05E-7	22.15		20.60	2.37
	L0000125	409098.04	3772800.15	104.67	3.65	1.05E-7	22.15		20.60	2.37
	L0000126	409142.34	3772800.23	104.62	3.65	1.05E-7	22.15		20.60	2.37
	L0000127	409186.64	3772800.30	104.90	3.65	1.05E-7	22.15		20.60	2.37
	L0000128	409230.94	3772800.38	105.92	3.65	1.05E-7	22.15		20.60	2.37
	L0000129	409275.24	3772800.45	106.93	3.65	1.05E-7	22.15		20.60	2.37

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000130	409319.54	3772800.53	107.22	3.65	1.05E-7	22.15		20.60	2.37
	L0000131	409363.84	3772800.60	107.30	3.65	1.05E-7	22.15		20.60	2.37
	L0000132	409408.14	3772800.67	107.42	3.65	1.05E-7	22.15		20.60	2.37
	L0000133	409452.44	3772800.75	107.55	3.65	1.05E-7	22.15		20.60	2.37
	L0000134	409496.74	3772800.82	107.71	3.65	1.05E-7	22.15		20.60	2.37
	L0000135	409541.04	3772800.90	107.99	3.65	1.05E-7	22.15		20.60	2.37
	L0000136	409585.34	3772800.97	108.36	3.65	1.05E-7	22.15		20.60	2.37
	L0000137	409629.64	3772801.05	108.60	3.65	1.05E-7	22.15		20.60	2.37
	L0000138	409673.94	3772801.12	108.74	3.65	1.05E-7	22.15		20.60	2.37
	L0000139	409718.24	3772801.19	108.91	3.65	1.05E-7	22.15		20.60	2.37
	L0000140	409762.54	3772801.27	109.02	3.65	1.05E-7	22.15		20.60	2.37
	L0000141	409806.84	3772801.34	109.16	3.65	1.05E-7	22.15		20.60	2.37
	L0000142	409851.14	3772801.42	109.32	3.65	1.05E-7	22.15		20.60	2.37

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	409137.19	3772257.01	12	21	75.00	75.00

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	409401.47	3772863.91		107.99	
2	409875.62	3772861.91		109.93	
3	409457.48	3773214.03		110.17	
4	409803.60	3773364.08		112.42	

Plant Boundary Receptors

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	409185.40	3772822.72	FENCEPRI	105.12	
2	409168.92	3773498.24	FENCEPRI	110.54	
3	409098.31	3773335.83	FENCEPRI	108.78	
4	409041.82	3773234.62	FENCEPRI	108.26	
5	409004.16	3773171.07	FENCEPRI	108.05	
6	408971.21	3773131.06	FENCEPRI	107.62	
7	408964.15	3772822.72	FENCEPRI	105.58	

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors

Terrain Elevations and Flagpole Heights for Network Grids

Uniform Cartesian Grid

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409137.19	3772257.01	55.30	Option not Selected
	409212.19	3772257.01	54.10	
	409287.19	3772257.01	66.40	
	409362.19	3772257.01	103.90	
	409437.19	3772257.01	105.70	
	409512.19	3772257.01	106.20	
	409587.19	3772257.01	106.20	
	409662.19	3772257.01	106.70	
	409737.19	3772257.01	107.10	
	409812.19	3772257.01	107.50	
	409887.19	3772257.01	107.60	
	409962.19	3772257.01	108.40	
	409137.19	3772332.01	53.80	
	409212.19	3772332.01	53.80	
	409287.19	3772332.01	63.20	
	409362.19	3772332.01	103.50	
	409437.19	3772332.01	105.70	
	409512.19	3772332.01	106.30	
	409587.19	3772332.01	106.70	
	409662.19	3772332.01	106.80	
	409737.19	3772332.01	107.20	
	409812.19	3772332.01	107.60	
	409887.19	3772332.01	108.10	
	409962.19	3772332.01	108.50	
	409137.19	3772407.01	54.00	
	409212.19	3772407.01	55.10	
	409287.19	3772407.01	65.60	
	409362.19	3772407.01	102.50	
	409437.19	3772407.01	105.50	
	409512.19	3772407.01	106.00	
	409587.19	3772407.01	106.90	
	409662.19	3772407.01	107.20	
	409737.19	3772407.01	107.70	
	409812.19	3772407.01	107.90	
	409887.19	3772407.01	108.40	
	409962.19	3772407.01	108.90	
	409137.19	3772482.01	56.00	
	409212.19	3772482.01	55.30	
	409287.19	3772482.01	65.10	
	409362.19	3772482.01	103.00	
	409437.19	3772482.01	105.70	
	409512.19	3772482.01	106.60	
	409587.19	3772482.01	107.30	
	409662.19	3772482.01	107.40	
	409737.19	3772482.01	107.90	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3772482.01	108.20	Option not Selected
	409887.19	3772482.01	109.00	
	409962.19	3772482.01	109.50	
	409137.19	3772557.01	53.80	
	409212.19	3772557.01	54.60	
	409287.19	3772557.01	65.40	
	409362.19	3772557.01	103.40	
	409437.19	3772557.01	106.00	
	409512.19	3772557.01	106.80	
	409587.19	3772557.01	107.50	
	409662.19	3772557.01	107.90	
	409737.19	3772557.01	108.00	
	409812.19	3772557.01	108.30	
	409887.19	3772557.01	108.70	
	409962.19	3772557.01	109.10	
	409137.19	3772632.01	62.00	
	409212.19	3772632.01	65.80	
	409287.19	3772632.01	65.70	
	409362.19	3772632.01	103.50	
	409437.19	3772632.01	106.20	
	409512.19	3772632.01	107.00	
	409587.19	3772632.01	107.80	
	409662.19	3772632.01	108.10	
	409737.19	3772632.01	109.40	
	409812.19	3772632.01	108.90	
	409887.19	3772632.01	109.20	
	409962.19	3772632.01	109.40	
	409137.19	3772707.01	90.60	
	409212.19	3772707.01	77.50	
	409287.19	3772707.01	72.80	
	409362.19	3772707.01	107.00	
	409437.19	3772707.01	107.10	
	409512.19	3772707.01	107.20	
	409587.19	3772707.01	108.00	
	409662.19	3772707.01	108.50	
	409737.19	3772707.01	109.60	
	409812.19	3772707.01	109.30	
	409887.19	3772707.01	109.50	
	409962.19	3772707.01	109.90	
	409137.19	3772782.01	104.80	
	409212.19	3772782.01	105.50	
	409287.19	3772782.01	107.00	
	409362.19	3772782.01	107.40	
	409437.19	3772782.01	107.70	
	409512.19	3772782.01	107.90	
	409587.19	3772782.01	108.50	
	409662.19	3772782.01	108.80	
	409737.19	3772782.01	109.00	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3772782.01	109.30	Option not Selected
	409887.19	3772782.01	109.60	
	409962.19	3772782.01	110.20	
	409137.19	3772857.01	106.70	
	409212.19	3772857.01	106.20	
	409287.19	3772857.01	107.30	
	409362.19	3772857.01	107.60	
	409437.19	3772857.01	108.00	
	409512.19	3772857.01	108.20	
	409587.19	3772857.01	108.70	
	409662.19	3772857.01	108.90	
	409737.19	3772857.01	109.30	
	409812.19	3772857.01	109.80	
	409887.19	3772857.01	110.10	
	409962.19	3772857.01	110.50	
	409137.19	3772932.01	107.10	
	409212.19	3772932.01	107.40	
	409287.19	3772932.01	107.50	
	409362.19	3772932.01	107.80	
	409437.19	3772932.01	108.10	
	409512.19	3772932.01	108.70	
	409587.19	3772932.01	108.80	
	409662.19	3772932.01	109.30	
	409737.19	3772932.01	109.70	
	409812.19	3772932.01	109.80	
	409887.19	3772932.01	110.40	
	409962.19	3772932.01	110.80	
	409137.19	3773007.01	107.60	
	409212.19	3773007.01	107.60	
	409287.19	3773007.01	107.50	
	409362.19	3773007.01	108.20	
	409437.19	3773007.01	108.50	
	409512.19	3773007.01	109.00	
	409587.19	3773007.01	109.00	
	409662.19	3773007.01	109.50	
	409737.19	3773007.01	110.20	
	409812.19	3773007.01	110.60	
	409887.19	3773007.01	110.70	
	409962.19	3773007.01	111.50	
	409137.19	3773082.01	107.60	
	409212.19	3773082.01	108.10	
	409287.19	3773082.01	108.60	
	409362.19	3773082.01	108.50	
	409437.19	3773082.01	108.90	
	409512.19	3773082.01	109.50	
	409587.19	3773082.01	109.40	
	409662.19	3773082.01	109.90	
	409737.19	3773082.01	110.20	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3773082.01	111.00	Option not Selected
	409887.19	3773082.01	111.10	
	409962.19	3773082.01	111.50	
	409137.19	3773157.01	108.00	
	409212.19	3773157.01	108.10	
	409287.19	3773157.01	109.10	
	409362.19	3773157.01	108.70	
	409437.19	3773157.01	109.90	
	409512.19	3773157.01	109.50	
	409587.19	3773157.01	109.90	
	409662.19	3773157.01	110.30	
	409737.19	3773157.01	111.00	
	409812.19	3773157.01	111.50	
	409887.19	3773157.01	111.50	
	409962.19	3773157.01	112.40	
	409137.19	3773232.01	109.50	
	409212.19	3773232.01	110.00	
	409287.19	3773232.01	109.50	
	409362.19	3773232.01	109.00	
	409437.19	3773232.01	109.30	
	409512.19	3773232.01	110.20	
	409587.19	3773232.01	110.10	
	409662.19	3773232.01	110.90	
	409737.19	3773232.01	111.40	
	409812.19	3773232.01	111.60	
	409887.19	3773232.01	111.90	
	409962.19	3773232.01	112.60	
	409137.19	3773307.01	109.60	
	409212.19	3773307.01	110.30	
	409287.19	3773307.01	109.50	
	409362.19	3773307.01	109.30	
	409437.19	3773307.01	110.40	
	409512.19	3773307.01	110.60	
	409587.19	3773307.01	111.00	
	409662.19	3773307.01	111.80	
	409737.19	3773307.01	111.90	
	409812.19	3773307.01	112.20	
	409887.19	3773307.01	112.30	
	409962.19	3773307.01	113.00	
	409137.19	3773382.01	109.70	
	409212.19	3773382.01	110.70	
	409287.19	3773382.01	110.20	
	409362.19	3773382.01	109.90	
	409437.19	3773382.01	110.50	
	409512.19	3773382.01	110.90	
	409587.19	3773382.01	111.70	
	409662.19	3773382.01	111.90	
	409737.19	3773382.01	112.50	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3773382.01	112.60	Option not Selected
	409887.19	3773382.01	113.20	
	409962.19	3773382.01	113.90	
	409137.19	3773457.01	109.90	
	409212.19	3773457.01	111.30	
	409287.19	3773457.01	111.10	
	409362.19	3773457.01	110.20	
	409437.19	3773457.01	110.90	
	409512.19	3773457.01	111.50	
	409587.19	3773457.01	111.70	
	409662.19	3773457.01	112.10	
	409737.19	3773457.01	112.60	
	409812.19	3773457.01	113.10	
	409887.19	3773457.01	114.30	
	409962.19	3773457.01	114.20	
	409137.19	3773532.01	112.90	
	409212.19	3773532.01	111.70	
	409287.19	3773532.01	111.70	
	409362.19	3773532.01	111.60	
	409437.19	3773532.01	112.30	
	409512.19	3773532.01	112.10	
	409587.19	3773532.01	112.30	
	409662.19	3773532.01	112.70	
	409737.19	3773532.01	113.60	
	409812.19	3773532.01	113.60	
	409887.19	3773532.01	113.90	
	409962.19	3773532.01	114.50	
	409137.19	3773607.01	109.60	
	409212.19	3773607.01	113.60	
	409287.19	3773607.01	112.10	
	409362.19	3773607.01	112.50	
	409437.19	3773607.01	112.80	
	409512.19	3773607.01	113.10	
	409587.19	3773607.01	112.90	
	409662.19	3773607.01	113.20	
	409737.19	3773607.01	114.00	
	409812.19	3773607.01	114.00	
	409887.19	3773607.01	114.70	
	409962.19	3773607.01	115.10	
	409137.19	3773682.01	110.50	
	409212.19	3773682.01	109.90	
	409287.19	3773682.01	114.60	
	409362.19	3773682.01	112.50	
	409437.19	3773682.01	113.50	
	409512.19	3773682.01	113.50	
	409587.19	3773682.01	113.40	
	409662.19	3773682.01	114.80	
	409737.19	3773682.01	115.40	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3773682.01	114.80	Option not Selected
	409887.19	3773682.01	115.80	
	409962.19	3773682.01	116.30	
	409137.19	3773757.01	113.60	
	409212.19	3773757.01	112.00	
	409287.19	3773757.01	109.50	
	409362.19	3773757.01	115.50	
	409437.19	3773757.01	113.40	
	409512.19	3773757.01	114.20	
	409587.19	3773757.01	114.40	
	409662.19	3773757.01	114.90	
	409737.19	3773757.01	115.60	
	409812.19	3773757.01	115.70	
	409887.19	3773757.01	115.90	
	409962.19	3773757.01	116.40	

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: C:\Users\smyers\Desktop\AZUS_V9_ADJU\AZUS_v9.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: C:\Users\smyers\Desktop\AZUS_V9_ADJU\AZUS_v9.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 104.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2012			
Upper Air		2012			
On-Site		2012			

Data Period

Data Period to Process

Start Date: 1/1/2012 Start Hour: 1 End Date: 12/31/2016 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

AERMOD

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No
24	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: Irwindale Industrial.AD

Averaging Period	Source Group ID	High Value	File Name
1	ALL	1st	01H1GALL.PLT
24	ALL	1st	24H1GALL.PLT
Annual	ALL	N/A	AN00GALL.PLT

Sensitive Receptor Summary

C:\Lakes\AERMOD View\Irwindale Industrial\Irwindale Industrial.isc

PM10 - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.07621	ug/m^3	Residence 1	409401.47	3772863.91	107.99	0.00	107.99	6/17/2014, 6
1-HR	1ST	0.02877	ug/m^3	Residence 2	409875.62	3772861.91	109.93	0.00	109.93	6/25/2015, 6
1-HR	1ST	0.06270	ug/m^3	Residence 3	409457.48	3773214.03	110.17	0.00	110.17	7/13/2014, 6
1-HR	1ST	0.02925	ug/m^3	School 4	409803.60	3773364.08	112.42	0.00	112.42	7/13/2014, 6
1-HR	1ST	0.08546	ug/m^3	Residence 5	409369.71	3772957.56	107.70	0.00	107.70	6/25/2015, 6
1-HR	1ST	0.08260	ug/m^3	Residence 6	409388.47	3773026.76	108.60	0.00	108.60	6/24/2015, 6
24-HR	1ST	0.01904	ug/m^3	Residence 1	409401.47	3772863.91	107.99	0.00	107.99	6/27/2015, 24
24-HR	1ST	0.00703	ug/m^3	Residence 2	409875.62	3772861.91	109.93	0.00	109.93	6/27/2015, 24
24-HR	1ST	0.01976	ug/m^3	Residence 3	409457.48	3773214.03	110.17	0.00	110.17	11/12/2014, 24
24-HR	1ST	0.00962	ug/m^3	School 4	409803.60	3773364.08	112.42	0.00	112.42	9/10/2013, 24
24-HR	1ST	0.02699	ug/m^3	Residence 5	409369.71	3772957.56	107.70	0.00	107.70	6/27/2015, 24
24-HR	1ST	0.02695	ug/m^3	Residence 6	409388.47	3773026.76	108.60	0.00	108.60	11/12/2014, 24
ANNUAL		0.00598	ug/m^3	Residence 1	409401.47	3772863.91	107.99	0.00	107.99	
ANNUAL		0.00206	ug/m^3	Residence 2	409875.62	3772861.91	109.93	0.00	109.93	
ANNUAL		0.00660	ug/m^3	Residence 3	409457.48	3773214.03	110.17	0.00	110.17	
ANNUAL		0.00276	ug/m^3	School 4	409803.60	3773364.08	112.42	0.00	112.42	
ANNUAL		0.00931	ug/m^3	Residence 5	409369.71	3772957.56	107.70	0.00	107.70	
ANNUAL		0.00974	ug/m^3	Residence 6	409388.47	3773026.76	108.60	0.00	108.60	

ATTACHMENT C

CalEEMod Output Files – Greenhouse Gas Emissions

13131 Los Angeles Street Industrial Project

Los Angeles-South Coast County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	528.71	1000sqft	24.88	528,710.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2021
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	511.47	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - SCE 2017 CO2 Intensity Factor

Land Use - Lot acreage update to match that of the project.

Construction Phase - Construction, paving and coating will occur at the same time.

Demolition -

Vehicle Trips - Trips updated to match the traffic report.

Construction Off-road Equipment Mitigation - SCAQMD rule 403. Percent reductions based on fugutive dust mitigation measures-Table 11-4

Fleet Mix - Fleet mix updated to match that of the traffic report provided by KOA.

Water And Wastewater - Water use per Section 3.11 of the Draft EIR

Solid Waste - Solid waste per Section 3.11 of the Draft EIR

13131 Los Angeles Street Industrial Project - Los Angeles-South Coast County, Annual

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	CleanPavedRoadPercentReduction	0	40
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstructionPhase	NumDays	20.00	370.00
tblConstructionPhase	NumDays	20.00	370.00
tblConstructionPhase	PhaseEndDate	4/23/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	2/26/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	7/26/2019	5/28/2020
tblConstructionPhase	PhaseEndDate	9/27/2019	7/30/2020
tblConstructionPhase	PhaseEndDate	3/26/2021	12/30/2021
tblConstructionPhase	PhaseEndDate	8/9/2019	6/11/2020
tblConstructionPhase	PhaseStartDate	3/27/2021	7/31/2020
tblConstructionPhase	PhaseStartDate	9/28/2019	7/31/2020
tblConstructionPhase	PhaseStartDate	7/1/2019	5/1/2020
tblConstructionPhase	PhaseStartDate	8/10/2019	6/12/2020
tblConstructionPhase	PhaseStartDate	2/27/2021	7/31/2020
tblConstructionPhase	PhaseStartDate	7/27/2019	5/29/2020
tblFleetMix	HHD	0.03	0.10
tblFleetMix	LDA	0.55	0.44
tblFleetMix	MH	8.9100e-004	0.00
tblFleetMix	MHD	0.02	0.06
tblFleetMix	OBUS	2.4790e-003	0.00
tblFleetMix	SBUS	6.8200e-004	0.00
tblFleetMix	UBUS	2.2700e-003	0.00
tblLandUse	LotAcreage	12.14	24.88
tblProjectCharacteristics	CO2IntensityFactor	702.44	511.47
tblSolidWaste	SolidWasteGenerationRate	655.60	938.60

tblVehicleTrips	CC_TL	8.40	49.80
tblVehicleTrips	CNW_TL	6.90	49.80
tblVehicleTrips	CW_TL	16.60	49.80
tblVehicleTrips	DV_TP	5.00	0.00
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	92.00	100.00
tblVehicleTrips	ST_TR	1.32	6.54
tblVehicleTrips	SU_TR	0.68	6.54
tblVehicleTrips	WD_TR	6.97	6.54
tblWater	IndoorWaterUseRate	122,264,187.50	22,395,735.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.1571	3.9644	3.5278	7.7100e-003	0.4813	0.1786	0.6599	0.1733	0.1663	0.3396	0.0000	691.3378	691.3378	0.1271	0.0000	694.5156
2021	2.3531	5.3827	5.9800	0.0137	0.4715	0.2305	0.7021	0.1269	0.2157	0.3426	0.0000	1,234.6650	1,234.6650	0.1869	0.0000	1,239.3362
Maximum	**2.3531**	**5.3827**	**5.9800**	**0.0137**	**0.4813**	**0.2305**	**0.7021**	**0.1733**	**0.2157**	**0.3426**	**0.0000**	**1,234.6650**	**1,234.6650**	**0.1869**	**0.0000**	**1,239.3362**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	1.1571	3.9644	3.5278	7.7100e-003	0.2446	0.1786	0.4232	0.0846	0.1663	0.2509	0.0000	691.3373	691.3373	0.1271	0.0000	694.5151
2021	2.3531	5.3827	5.9800	0.0137	0.3126	0.2305	0.5431	0.0879	0.2157	0.3035	0.0000	1,234.6643	1,234.6643	0.1869	0.0000	1,239.3355
Maximum	**2.3531**	**5.3827**	**5.9800**	**0.0137**	**0.3126**	**0.2305**	**0.5431**	**0.0879**	**0.2157**	**0.3035**	**0.0000**	**1,234.6643**	**1,234.6643**	**0.1869**	**0.0000**	**1,239.3355**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**41.52**	**0.00**	**29.05**	**42.56**	**0.00**	**18.73**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
4	**4-1-2020**	**6-30-2020**	1.0135	1.0135
5	**7-1-2020**	**9-30-2020**	1.9972	1.9972
6	**10-1-2020**	**12-31-2020**	2.1006	2.1006
7	**1-1-2021**	**3-31-2021**	1.9113	1.9113
8	**4-1-2021**	**6-30-2021**	1.9254	1.9254
9	**7-1-2021**	**9-30-2021**	1.9466	1.9466
		Highest	2.1006	2.1006

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1562	6.0000e-005	6.7700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0140
Energy	0.0516	0.4691	0.3940	2.8100e-003		0.0357	0.0357		0.0357	0.0357	0.0000	1,872.2005	1,872.2005	0.0870	0.0253	1,881.9248
Mobile	4.1813	48.1456	74.2371	0.3688	24.1786	0.2990	24.4776	6.5170	0.2813	6.7983	0.0000	34,459.7207	34,459.7207	1.3446	0.0000	34,493.3352
Waste						0.0000	0.0000		0.0000	0.0000	190.5273	0.0000	190.5273	11.2598	0.0000	472.0234
Water						0.0000	0.0000		0.0000	0.0000	7.1051	67.6543	74.7595	0.7336	0.0180	98.4709
Total	**6.3890**	**48.6148**	**74.6379**	**0.3716**	**24.1786**	**0.3347**	**24.5132**	**6.5170**	**0.3170**	**6.8340**	**197.6325**	**36,399.5887**	**36,597.2211**	**13.4250**	**0.0434**	**36,945.7682**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	2.1562	6.0000e-005	6.7700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0140
Energy	0.0516	0.4691	0.3940	2.8100e-003		0.0357	0.0357		0.0357	0.0357	0.0000	1,872.2005	1,872.2005	0.0870	0.0253	1,881.9248
Mobile	4.1813	48.1456	74.2371	0.3688	24.1786	0.2990	24.4776	6.5170	0.2813	6.7983	0.0000	34,459.7207	34,459.7207	1.3446	0.0000	34,493.3352
Waste						0.0000	0.0000		0.0000	0.0000	190.5273	0.0000	190.5273	11.2598	0.0000	472.0234
Water						0.0000	0.0000		0.0000	0.0000	7.1051	67.6543	74.7595	0.7336	0.0180	98.4709
Total	**6.3890**	**48.6148**	**74.6379**	**0.3716**	**24.1786**	**0.3347**	**24.5132**	**6.5170**	**0.3170**	**6.8340**	**197.6325**	**36,399.5887**	**36,597.2211**	**13.4250**	**0.0434**	**36,945.7682**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/28/2020	5	20	
2	Site Preparation	Site Preparation	5/29/2020	6/11/2020	5	10	
3	Grading	Grading	6/12/2020	7/30/2020	5	35	
4	Building Construction	Building Construction	7/31/2020	12/30/2021	5	370	
5	Paving	Paving	7/31/2020	12/30/2021	5	370	
6	Architectural Coating	Architectural Coating	7/31/2020	12/30/2021	5	370	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 87.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 793,065; Non-Residential Outdoor: 264,355; Striped Parking Area: 0 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	284.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	222.00	87.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	44.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

Clean Paved Roads

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0308	0.0000	0.0308	4.6600e-003	0.0000	4.6600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.0308**	**0.0166**	**0.0474**	**4.6600e-003**	**0.0154**	**0.0201**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2500e-003	0.0422	9.2900e-003	1.1000e-004	2.4400e-003	1.3000e-004	2.5700e-003	6.7000e-004	1.3000e-004	8.0000e-004	0.0000	10.9451	10.9451	7.6000e-004	0.0000	10.9642
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.6400e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	**1.9400e-003**	**0.0427**	**0.0155**	**1.3000e-004**	**4.0800e-003**	**1.4000e-004**	**4.2300e-003**	**1.1100e-003**	**1.4000e-004**	**1.2500e-003**	**0.0000**	**12.4771**	**12.4771**	**8.1000e-004**	**0.0000**	**12.4974**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0120	0.0000	0.0120	1.8200e-003	0.0000	1.8200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.0120**	**0.0166**	**0.0286**	**1.8200e-003**	**0.0154**	**0.0172**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2500e-003	0.0422	9.2900e-003	1.1000e-004	1.7100e-003	1.3000e-004	1.8400e-003	4.9000e-004	1.3000e-004	6.2000e-004	0.0000	10.9451	10.9451	7.6000e-004	0.0000	10.9642
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.9000e-004	5.6000e-004	6.1700e-003	2.0000e-005	1.0700e-003	1.0000e-005	1.0900e-003	3.0000e-004	1.0000e-005	3.1000e-004	0.0000	1.5320	1.5320	5.0000e-005	0.0000	1.5332
Total	**1.9400e-003**	**0.0427**	**0.0155**	**1.3000e-004**	**2.7800e-003**	**1.4000e-004**	**2.9300e-003**	**7.9000e-004**	**1.4000e-004**	**9.3000e-004**	**0.0000**	**12.4771**	**12.4771**	**8.1000e-004**	**0.0000**	**12.4974**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0903	0.0000	0.0903	0.0497	0.0000	0.0497	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0903**	**0.0110**	**0.1013**	**0.0497**	**0.0101**	**0.0598**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	9.9000e-004	1.0000e-005	9.9000e-004	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199
Total	**4.2000e-004**	**3.4000e-004**	**3.7000e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**9.9000e-004**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.9192**	**0.9192**	**3.0000e-005**	**0.0000**	**0.9199**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0352	0.0000	0.0352	0.0194	0.0000	0.0194	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0204	0.2121	0.1076	1.9000e-004		0.0110	0.0110		0.0101	0.0101	0.0000	16.7153	16.7153	5.4100e-003	0.0000	16.8505
Total	**0.0204**	**0.2121**	**0.1076**	**1.9000e-004**	**0.0352**	**0.0110**	**0.0462**	**0.0194**	**0.0101**	**0.0295**	**0.0000**	**16.7153**	**16.7153**	**5.4100e-003**	**0.0000**	**16.8505**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	3.4000e-004	3.7000e-003	1.0000e-005	6.4000e-004	1.0000e-005	6.5000e-004	1.8000e-004	1.0000e-005	1.9000e-004	0.0000	0.9192	0.9192	3.0000e-005	0.0000	0.9199
Total	**4.2000e-004**	**3.4000e-004**	**3.7000e-003**	**1.0000e-005**	**6.4000e-004**	**1.0000e-005**	**6.5000e-004**	**1.8000e-004**	**1.0000e-005**	**1.9000e-004**	**0.0000**	**0.9192**	**0.9192**	**3.0000e-005**	**0.0000**	**0.9199**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1518	0.0000	0.1518	0.0629	0.0000	0.0629	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0779	0.8785	0.5593	1.0900e-003		0.0380	0.0380		0.0350	0.0350	0.0000	95.3475	95.3475	0.0308	0.0000	96.1185
Total	**0.0779**	**0.8785**	**0.5593**	**1.0900e-003**	**0.1518**	**0.0380**	**0.1898**	**0.0629**	**0.0350**	**0.0979**	**0.0000**	**95.3475**	**95.3475**	**0.0308**	**0.0000**	**96.1185**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.3000e-003	0.0144	4.0000e-005	3.8400e-003	3.0000e-005	3.8700e-003	1.0200e-003	3.0000e-005	1.0500e-003	0.0000	3.5747	3.5747	1.1000e-004	0.0000	3.5775
Total	**1.6200e-003**	**1.3000e-003**	**0.0144**	**4.0000e-005**	**3.8400e-003**	**3.0000e-005**	**3.8700e-003**	**1.0200e-003**	**3.0000e-005**	**1.0500e-003**	**0.0000**	**3.5747**	**3.5747**	**1.1000e-004**	**0.0000**	**3.5775**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0592	0.0000	0.0592	0.0246	0.0000	0.0246	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0779	0.8785	0.5593	1.0900e-003		0.0380	0.0380		0.0350	0.0350	0.0000	95.3474	95.3474	0.0308	0.0000	96.1183
Total	**0.0779**	**0.8785**	**0.5593**	**1.0900e-003**	**0.0592**	**0.0380**	**0.0972**	**0.0246**	**0.0350**	**0.0596**	**0.0000**	**95.3474**	**95.3474**	**0.0308**	**0.0000**	**96.1183**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.6200e-003	1.3000e-003	0.0144	4.0000e-005	2.5100e-003	3.0000e-005	2.5400e-003	6.9000e-004	3.0000e-005	7.2000e-004	0.0000	3.5747	3.5747	1.1000e-004	0.0000	3.5775
Total	**1.6200e-003**	**1.3000e-003**	**0.0144**	**4.0000e-005**	**2.5100e-003**	**3.0000e-005**	**2.5400e-003**	**6.9000e-004**	**3.0000e-005**	**7.2000e-004**	**0.0000**	**3.5747**	**3.5747**	**1.1000e-004**	**0.0000**	**3.5775**

3.5 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1166	1.0552	0.9267	1.4800e-003		0.0614	0.0614		0.0578	0.0578	0.0000	127.3855	127.3855	0.0311	0.0000	128.1624
Total	**0.1166**	**1.0552**	**0.9267**	**1.4800e-003**		**0.0614**	**0.0614**		**0.0578**	**0.0578**	**0.0000**	**127.3855**	**127.3855**	**0.0311**	**0.0000**	**128.1624**

3.5 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.5185	0.1404	1.2300e-003	0.0301	2.4100e-003	0.0326	8.7000e-003	2.3100e-003	0.0110	0.0000	118.8719	118.8719	7.5500e-003	0.0000	119.0608
Worker	0.0564	0.0455	0.5026	1.3800e-003	0.1338	1.1400e-003	0.1349	0.0355	1.0500e-003	0.0366	0.0000	124.7069	124.7069	3.9300e-003	0.0000	124.8052
Total	**0.0737**	**0.5640**	**0.6430**	**2.6100e-003**	**0.1639**	**3.5500e-003**	**0.1675**	**0.0442**	**3.3600e-003**	**0.0476**	**0.0000**	**243.5788**	**243.5788**	**0.0115**	**0.0000**	**243.8659**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1166	1.0552	0.9267	1.4800e-003		0.0614	0.0614		0.0578	0.0578	0.0000	127.3853	127.3853	0.0311	0.0000	128.1623
Total	**0.1166**	**1.0552**	**0.9267**	**1.4800e-003**		**0.0614**	**0.0614**		**0.0578**	**0.0578**	**0.0000**	**127.3853**	**127.3853**	**0.0311**	**0.0000**	**128.1623**

3.5 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0174	0.5185	0.1404	1.2300e-003	0.0216	2.4100e-003	0.0240	6.6000e-003	2.3100e-003	8.9100e-003	0.0000	118.8719	118.8719	7.5500e-003	0.0000	119.0608
Worker	0.0564	0.0455	0.5026	1.3800e-003	0.0874	1.1400e-003	0.0886	0.0242	1.0500e-003	0.0252	0.0000	124.7069	124.7069	3.9300e-003	0.0000	124.8052
Total	**0.0737**	**0.5640**	**0.6430**	**2.6100e-003**	**0.1090**	**3.5500e-003**	**0.1126**	**0.0308**	**3.3600e-003**	**0.0341**	**0.0000**	**243.5788**	**243.5788**	**0.0115**	**0.0000**	**243.8659**

3.5 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2662	2.1548	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.1285	301.1285	0.0727	0.0000	302.9447
Total	**0.2471**	**2.2662**	**2.1548**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.1285**	**301.1285**	**0.0727**	**0.0000**	**302.9447**

3.5 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0351	1.1162	0.3026	2.8800e-003	0.0712	2.2800e-003	0.0735	0.0206	2.1800e-003	0.0227	0.0000	278.7876	278.7876	0.0171	0.0000	279.2151
Worker	0.1242	0.0967	1.0914	3.1600e-003	0.3163	2.6100e-003	0.3189	0.0840	2.4000e-003	0.0864	0.0000	285.4015	285.4015	8.4000e-003	0.0000	285.6114
Total	**0.1593**	**1.2129**	**1.3940**	**6.0400e-003**	**0.3875**	**4.8900e-003**	**0.3924**	**0.1046**	**4.5800e-003**	**0.1091**	**0.0000**	**564.1891**	**564.1891**	**0.0255**	**0.0000**	**564.8266**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2471	2.2662	2.1548	3.5000e-003		0.1246	0.1246		0.1172	0.1172	0.0000	301.1281	301.1281	0.0727	0.0000	302.9443
Total	**0.2471**	**2.2662**	**2.1548**	**3.5000e-003**		**0.1246**	**0.1246**		**0.1172**	**0.1172**	**0.0000**	**301.1281**	**301.1281**	**0.0727**	**0.0000**	**302.9443**

3.5 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0351	1.1162	0.3026	2.8800e-003	0.0511	2.2800e-003	0.0534	0.0156	2.1800e-003	0.0178	0.0000	278.7876	278.7876	0.0171	0.0000	279.2151
Worker	0.1242	0.0967	1.0914	3.1600e-003	0.2066	2.6100e-003	0.2092	0.0571	2.4000e-003	0.0595	0.0000	285.4015	285.4015	8.4000e-003	0.0000	285.6114
Total	**0.1593**	**1.2129**	**1.3940**	**6.0400e-003**	**0.2577**	**4.8900e-003**	**0.2626**	**0.0727**	**4.5800e-003**	**0.0773**	**0.0000**	**564.1891**	**564.1891**	**0.0255**	**0.0000**	**564.8266**

3.6 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0746	0.7736	0.8059	1.2500e-003		0.0414	0.0414		0.0381	0.0381	0.0000	110.1552	110.1552	0.0356	0.0000	111.0459
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0746**	**0.7736**	**0.8059**	**1.2500e-003**		**0.0414**	**0.0414**		**0.0381**	**0.0381**	**0.0000**	**110.1552**	**110.1552**	**0.0356**	**0.0000**	**111.0459**

3.6 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8100e-003	3.0700e-003	0.0340	9.0000e-005	9.0400e-003	8.0000e-005	9.1200e-003	2.4000e-003	7.0000e-005	2.4700e-003	0.0000	8.4261	8.4261	2.7000e-004	0.0000	8.4328
Total	**3.8100e-003**	**3.0700e-003**	**0.0340**	**9.0000e-005**	**9.0400e-003**	**8.0000e-005**	**9.1200e-003**	**2.4000e-003**	**7.0000e-005**	**2.4700e-003**	**0.0000**	**8.4261**	**8.4261**	**2.7000e-004**	**0.0000**	**8.4328**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0746	0.7736	0.8059	1.2500e-003		0.0414	0.0414		0.0381	0.0381	0.0000	110.1551	110.1551	0.0356	0.0000	111.0457
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0746**	**0.7736**	**0.8059**	**1.2500e-003**		**0.0414**	**0.0414**		**0.0381**	**0.0381**	**0.0000**	**110.1551**	**110.1551**	**0.0356**	**0.0000**	**111.0457**

3.6 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.8100e-003	3.0700e-003	0.0340	9.0000e-005	5.9100e-003	8.0000e-005	5.9800e-003	1.6300e-003	7.0000e-005	1.7000e-003	0.0000	8.4261	8.4261	2.7000e-004	0.0000	8.4328
Total	**3.8100e-003**	**3.0700e-003**	**0.0340**	**9.0000e-005**	**5.9100e-003**	**8.0000e-005**	**5.9800e-003**	**1.6300e-003**	**7.0000e-005**	**1.7000e-003**	**0.0000**	**8.4261**	**8.4261**	**2.7000e-004**	**0.0000**	**8.4328**

3.6 Paving - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1632	1.6795	1.9049	2.9600e-003		0.0881	0.0881		0.0811	0.0811	0.0000	260.3052	260.3052	0.0842	0.0000	262.4099
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1632**	**1.6795**	**1.9049**	**2.9600e-003**		**0.0881**	**0.0881**		**0.0811**	**0.0811**	**0.0000**	**260.3052**	**260.3052**	**0.0842**	**0.0000**	**262.4099**

3.6 Paving - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3900e-003	6.5300e-003	0.0737	2.1000e-004	0.0214	1.8000e-004	0.0215	5.6800e-003	1.6000e-004	5.8400e-003	0.0000	19.2839	19.2839	5.7000e-004	0.0000	19.2981
Total	**8.3900e-003**	**6.5300e-003**	**0.0737**	**2.1000e-004**	**0.0214**	**1.8000e-004**	**0.0215**	**5.6800e-003**	**1.6000e-004**	**5.8400e-003**	**0.0000**	**19.2839**	**19.2839**	**5.7000e-004**	**0.0000**	**19.2981**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1632	1.6795	1.9049	2.9600e-003		0.0881	0.0881		0.0811	0.0811	0.0000	260.3049	260.3049	0.0842	0.0000	262.4096
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1632**	**1.6795**	**1.9049**	**2.9600e-003**		**0.0881**	**0.0881**		**0.0811**	**0.0811**	**0.0000**	**260.3049**	**260.3049**	**0.0842**	**0.0000**	**262.4096**

3.6 Paving - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.3900e-003	6.5300e-003	0.0737	2.1000e-004	0.0140	1.8000e-004	0.0141	3.8600e-003	1.6000e-004	4.0200e-003	0.0000	19.2839	19.2839	5.7000e-004	0.0000	19.2981
Total	**8.3900e-003**	**6.5300e-003**	**0.0737**	**2.1000e-004**	**0.0140**	**1.8000e-004**	**0.0141**	**3.8600e-003**	**1.6000e-004**	**4.0200e-003**	**0.0000**	**19.2839**	**19.2839**	**5.7000e-004**	**0.0000**	**19.2981**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7286					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.0926	0.1007	1.6000e-004		6.1000e-003	6.1000e-003		6.1000e-003	6.1000e-003	0.0000	14.0429	14.0429	1.0900e-003	0.0000	14.0701
Total	**0.7419**	**0.0926**	**0.1007**	**1.6000e-004**		**6.1000e-003**	**6.1000e-003**		**6.1000e-003**	**6.1000e-003**	**0.0000**	**14.0429**	**14.0429**	**1.0900e-003**	**0.0000**	**14.0701**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	9.0100e-003	0.0996	2.7000e-004	0.0265	2.3000e-004	0.0267	7.0400e-003	2.1000e-004	7.2500e-003	0.0000	24.7167	24.7167	7.8000e-004	0.0000	24.7362
Total	**0.0112**	**9.0100e-003**	**0.0996**	**2.7000e-004**	**0.0265**	**2.3000e-004**	**0.0267**	**7.0400e-003**	**2.1000e-004**	**7.2500e-003**	**0.0000**	**24.7167**	**24.7167**	**7.8000e-004**	**0.0000**	**24.7362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.7286					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0133	0.0926	0.1007	1.6000e-004		6.1000e-003	6.1000e-003		6.1000e-003	6.1000e-003	0.0000	14.0429	14.0429	1.0900e-003	0.0000	14.0701
Total	**0.7419**	**0.0926**	**0.1007**	**1.6000e-004**		**6.1000e-003**	**6.1000e-003**		**6.1000e-003**	**6.1000e-003**	**0.0000**	**14.0429**	**14.0429**	**1.0900e-003**	**0.0000**	**14.0701**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0112	9.0100e-003	0.0996	2.7000e-004	0.0173	2.3000e-004	0.0176	4.7900e-003	2.1000e-004	4.9900e-003	0.0000	24.7167	24.7167	7.8000e-004	0.0000	24.7362
Total	**0.0112**	**9.0100e-003**	**0.0996**	**2.7000e-004**	**0.0173**	**2.3000e-004**	**0.0176**	**4.7900e-003**	**2.1000e-004**	**4.9900e-003**	**0.0000**	**24.7167**	**24.7167**	**7.8000e-004**	**0.0000**	**24.7362**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7220					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0285	0.1985	0.2363	3.9000e-004		0.0122	0.0122		0.0122	0.0122	0.0000	33.1923	33.1923	2.2800e-003	0.0000	33.2492
Total	**1.7505**	**0.1985**	**0.2363**	**3.9000e-004**		**0.0122**	**0.0122**		**0.0122**	**0.0122**	**0.0000**	**33.1923**	**33.1923**	**2.2800e-003**	**0.0000**	**33.2492**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0192	0.2163	6.3000e-004	0.0627	5.2000e-004	0.0632	0.0167	4.8000e-004	0.0171	0.0000	56.5661	56.5661	1.6600e-003	0.0000	56.6077
Total	**0.0246**	**0.0192**	**0.2163**	**6.3000e-004**	**0.0627**	**5.2000e-004**	**0.0632**	**0.0167**	**4.8000e-004**	**0.0171**	**0.0000**	**56.5661**	**56.5661**	**1.6600e-003**	**0.0000**	**56.6077**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7220					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0285	0.1985	0.2363	3.9000e-004		0.0122	0.0122		0.0122	0.0122	0.0000	33.1923	33.1923	2.2800e-003	0.0000	33.2492
Total	**1.7505**	**0.1985**	**0.2363**	**3.9000e-004**		**0.0122**	**0.0122**		**0.0122**	**0.0122**	**0.0000**	**33.1923**	**33.1923**	**2.2800e-003**	**0.0000**	**33.2492**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0246	0.0192	0.2163	6.3000e-004	0.0410	5.2000e-004	0.0415	0.0113	4.8000e-004	0.0118	0.0000	56.5661	56.5661	1.6600e-003	0.0000	56.6077
Total	**0.0246**	**0.0192**	**0.2163**	**6.3000e-004**	**0.0410**	**5.2000e-004**	**0.0415**	**0.0113**	**4.8000e-004**	**0.0118**	**0.0000**	**56.5661**	**56.5661**	**1.6600e-003**	**0.0000**	**56.6077**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.1813	48.1456	74.2371	0.3688	24.1786	0.2990	24.4776	6.5170	0.2813	6.7983	0.0000	34,459.7207	34,459.7207	1.3446	0.0000	34,493.3352
Unmitigated	4.1813	48.1456	74.2371	0.3688	24.1786	0.2990	24.4776	6.5170	0.2813	6.7983	0.0000	34,459.7207	34,459.7207	1.3446	0.0000	34,493.3352

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	3,458.82	3,458.82	3458.82	62,698,737	62,698,737
Total	3,458.82	3,458.82	3,458.82	62,698,737	62,698,737

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	49.80	49.80	49.80	59.00	28.00	13.00	100	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Light Industry	0.441202	0.045177	0.202743	0.121510	0.016147	0.006143	0.061000	0.101000	0.000000	0.000000	0.005078	0.000000	0.000000

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,361.5275	1,361.5275	0.0772	0.0160	1,368.2171
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	1,361.5275	1,361.5275	0.0772	0.0160	1,368.2171
NaturalGas Mitigated	0.0516	0.4691	0.3940	2.8100e-003		0.0357	0.0357		0.0357	0.0357	0.0000	510.6730	510.6730	9.7900e-003	9.3600e-003	513.7077
NaturalGas Unmitigated	0.0516	0.4691	0.3940	2.8100e-003		0.0357	0.0357		0.0357	0.0357	0.0000	510.6730	510.6730	9.7900e-003	9.3600e-003	513.7077

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	9.56965e+006	0.0516	0.4691	0.3940	2.8100e-003		0.0357	0.0357		0.0357	0.0357	0.0000	510.6730	510.6730	9.7900e-003	9.3600e-003	513.7077
Total		**0.0516**	**0.4691**	**0.3940**	**2.8100e-003**		**0.0357**	**0.0357**		**0.0357**	**0.0357**	**0.0000**	**510.6730**	**510.6730**	**9.7900e-003**	**9.3600e-003**	**513.7077**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Light Industry	9.56965e+006	0.0516	0.4691	0.3940	2.8100e-003		0.0357	0.0357		0.0357	0.0357	0.0000	510.6730	510.6730	9.7900e-003	9.3600e-003	513.7077
Total		**0.0516**	**0.4691**	**0.3940**	**2.8100e-003**		**0.0357**	**0.0357**		**0.0357**	**0.0357**	**0.0000**	**510.6730**	**510.6730**	**9.7900e-003**	**9.3600e-003**	**513.7077**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	5.86868e+006	1,361.5275	0.0772	0.0160	1,368.2171
Total		**1,361.5275**	**0.0772**	**0.0160**	**1,368.2171**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
General Light Industry	5.86868e+006	1,361.5275	0.0772	0.0160	1,368.2171
Total		**1,361.5275**	**0.0772**	**0.0160**	**1,368.2171**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.1562	6.0000e-005	6.7700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0140
Unmitigated	2.1562	6.0000e-005	6.7700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0140

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2451					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9105					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.3000e-004	6.0000e-005	6.7700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0140
Total	**2.1562**	**6.0000e-005**	**6.7700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0140**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.2451					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	1.9105					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	6.3000e-004	6.0000e-005	6.7700e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.0131	0.0131	3.0000e-005	0.0000	0.0140
Total	**2.1562**	**6.0000e-005**	**6.7700e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0131**	**0.0131**	**3.0000e-005**	**0.0000**	**0.0140**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	74.7595	0.7336	0.0180	98.4709
Unmitigated	74.7595	0.7336	0.0180	98.4709

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	22.3957 / 0	74.7595	0.7336	0.0180	98.4709
Total		**74.7595**	**0.7336**	**0.0180**	**98.4709**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
General Light Industry	22.3957 / 0	74.7595	0.7336	0.0180	98.4709
Total		**74.7595**	**0.7336**	**0.0180**	**98.4709**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	190.5273	11.2598	0.0000	472.0234
Unmitigated	190.5273	11.2598	0.0000	472.0234

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	938.6	190.5273	11.2598	0.0000	472.0234
Total		**190.5273**	**11.2598**	**0.0000**	**472.0234**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
General Light Industry	938.6	190.5273	11.2598	0.0000	472.0234
Total		**190.5273**	**11.2598**	**0.0000**	**472.0234**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX C

Health Risk Assessment

Health Risk Assessment

13131 Los Angeles Street Industrial Project

Irwindale, California

Prepared For:

Community Development Department, Planning Division
5050 North Irwindale Avenue
Irwindale, California

December 2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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APPENDICES

Appendix A – Health Risk Calculations and AERMOD Outputs

LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ASF	Age sensitivity factor
ATCM	Air Toxic Control Measure
Basin	South Coast Air Basin
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
DOORS	Diesel Off-Road Reporting System
DPM	Diesel Particulate Matter
EMFAC	EMission FACtor model
FAH	Fraction of time at home

LIST OF ACRONYMS AND ABBREVIATIONS

FCAA	federal Clean Air Act
HAP	Hazardous Air Pollutants
HRA	Health Risk Assessment
kg	Kilogram
MSAT	Mobile Source Air Toxic
NAAQS	National Ambient Air Quality Standards
NESHAPs	National Emissions Standards for Hazardous Air Pollutants
NO_X	Oxides of Nitrogen
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
PERP	Portable Equipment Registration Program
PM	Particulate matter
PM_{10}	Particulate matter less than 10 microns in diameter
Project	13131 Los Angeles Street Industrial Project
REL	Reference Exposure Level
Risk Reduction Plan	Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles
SCAQMD	South Coast Air Quality Management District
SRA	Source receptor area
TACs	Toxic Air Contaminants
USEPA	U.S. Environmental Protection Agency
$\mu g/m^3$	Micrograms per cubic meter

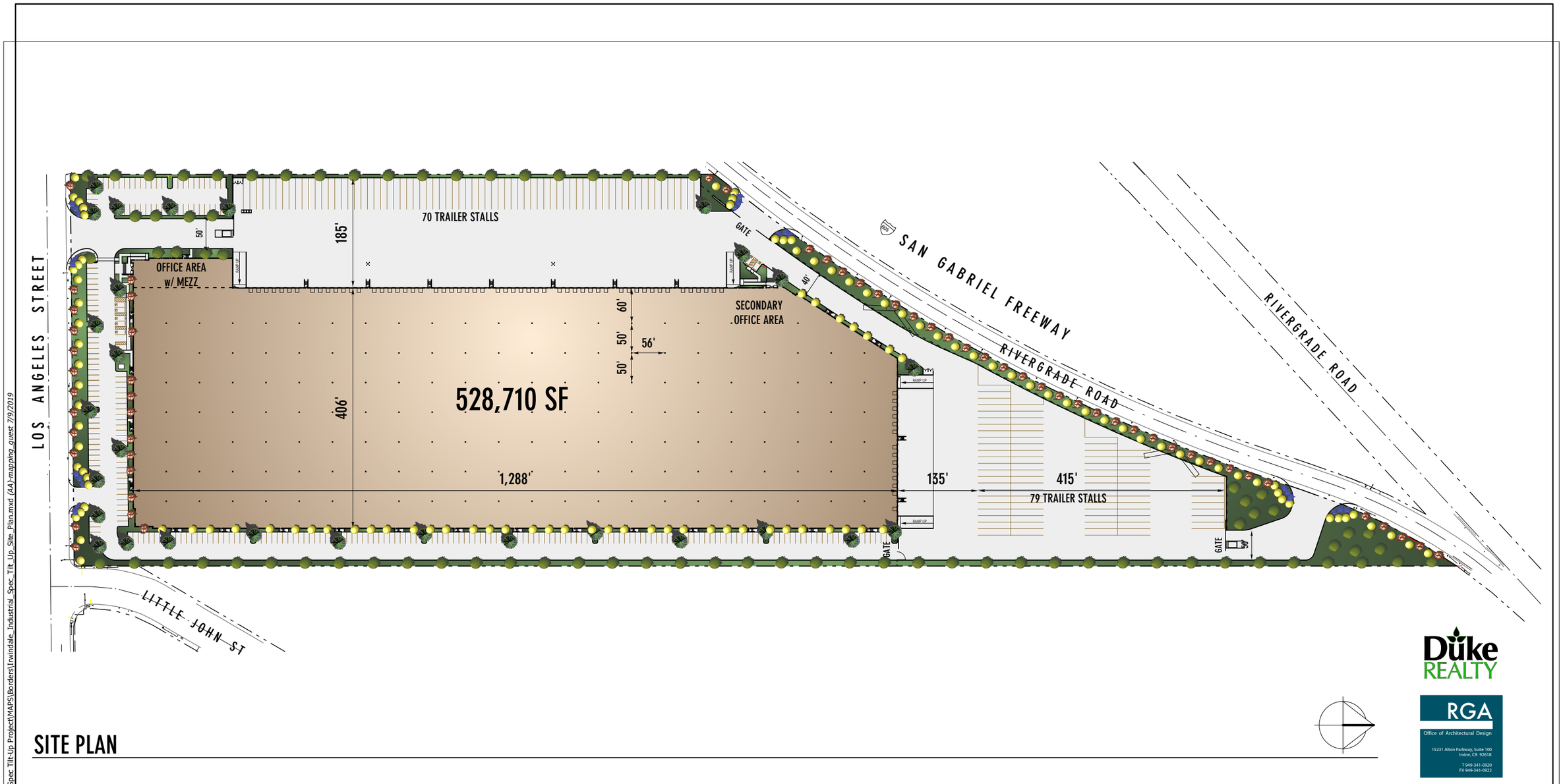
1.0 INTRODUCTION

This report evaluates the potential health risks associated with the 13131 Los Angeles Street Industrial Project (Project) proposed in Irwindale, California. The purpose of this Health Risk Assessment (HRA) is to evaluate potential health risks associated with Toxic Air Contaminants (TAC) including Diesel Particulate Matter (DPM) resulting from the implementation of the proposed Project (Project). This Health Risk Assessment was prepared in accordance with the requirements of the South Coast Air Quality Management District (SCAQMD) and guidance from the Office of Environmental Health Hazard Assessment (OEHHA) to determine if health risks are likely to occur from the proposed Project. Further, this assessment was prepared in consideration of the Notice of Preparation comment letters received from both the SCAQMD and California Air Resources Board (CARB) as presented in Appendix A of the Draft EIR prepared for the Project. Technical data is included as see Appendix A, *Dispersion Modeling Data*.

1.1 Project Description and Location

The Project site is located in the City of Irwindale, located in central Los Angeles County. The Project site is an ±24.88-acre lot located along Rivergrade Road and Los Angeles Street. The irregular shaped site is generally bound by Interstate 605 to the north and west, industrial uses and residences located in the City of Baldwin Park to the east, and Los Angeles Street to the south. The Project is proposing a 528,710 square foot concrete tilt-up building that will be used for industrial purposes (see Figure 1. *Site Plan*). The site has been previously developed as an industrial use and is currently occupied with multiple buildings proposed from demolition.

The Project site is designated by the City of Irwindale General Plan as "Industrial/Business Park". According to the General Plan, the Industrial/Business Park designation allows for office, manufacturing, and warehouse uses, including commercial manufacturing, light manufacturing, and heavy manufacturing.



SITE PLAN

Location: N:\2019\2019-030 Industrial Spec Tilt-Up Project\MAPS\Borders\Irwindale_Industrial_Spec_Tilt_Up_Site_Plan.mxd (AA)-mapping_quest_7/9/2019

Map Date: 7/9/2019
Source: RGA

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Figure 1 Site Plan

2019-030 Irwindale Industrial Spec Tilt-Up Project

2.0 HEALTH RISK ASSESSMENT

2.1 Environmental Setting

2.1.1 Climate and Meteorology

The CARB divides the State into 15 air basins that share similar meteorological and topographical features. The Project site lies within the central portion of the South Coast Air Basin (Basin). The Basin is a 6,600-square mile area bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. The Basin includes all of Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino counties, in addition to the San Gorgonio Pass area in Riverside County. The Basin's terrain and geographical location (i.e., a coastal plain with connecting broad valleys and low hills) determine its distinctive climate.

Climate

The general region lies in the semi-permanent high-pressure zone of the eastern Pacific. The climate is mild and tempered by cool sea breezes. The usually mild climatological pattern is interrupted infrequently by periods of extremely hot weather, winter storms, or Santa Ana winds. The extent and severity of the air pollution problem in the Basin is a function of the area's natural physical characteristics (weather and topography), as well as manmade influences (development patterns and lifestyle). Factors such as wind, sunlight, temperature, humidity, rainfall, and topography all affect the accumulation and/or dispersion of pollutants throughout the Basin. These factors along with applicable regulations are discussed below.

The average annual temperature varies little throughout the Basin, averaging 75°F. However, with a less-pronounced oceanic influence, the eastern inland portions of the Basin show greater variability in annual minimum and maximum temperatures. All portions of the Basin have had recorded temperatures over 100°F in recent years.

Meteorology

Although the Basin has a semi-arid climate, the air near the surface is moist due to the presence of a shallow marine layer. Except for infrequent periods when dry, continental air is brought into the Basin by offshore winds, the ocean effect is dominant. Periods with heavy fog are frequent, and low stratus clouds, occasionally referred to as "high fog," are a characteristic climate feature. Annual average relative humidity is 70 percent at the coast and 57 percent in the eastern part of the Basin. Precipitation in the Basin is typically nine to 14 inches annually and is rarely in the form of snow or hail due to typically warm weather. The frequency and amount of rainfall is greater in the coastal areas of the Basin.

A temperature inversion is defined as an increase in temperature with height, or to the layer within which such an increase occurs. The height of the inversion is important in determining pollutant concentration. When the inversion is approximately 2,500 feet above sea level, the sea breezes carry the pollutants inland to escape over the mountain slopes or through the passes. At a height of 1,200 feet, the terrain prevents the pollutants from entering the upper atmosphere, resulting in a settlement in the foothill communities.

Below 1,200 feet, the inversion puts a tight lid on pollutants, concentrating them in a shallow layer over the entire coastal basin. Inversions are usually lower before sunrise than during the day. Mixing heights for inversions are lower in the summer and more persistent, being partly responsible for the high levels of ozone (O_3) observed during summer months in the Basin. Smog in southern California is generally the result of these temperature inversions combining with coastal day winds and local mountains to contain the pollutants for long periods of time, allowing them to form secondary pollutants by reacting with sunlight. The Basin has a limited ability to disperse these pollutants due to typically low wind speeds.

The area in which the Project is located offers clear skies and sunshine, yet is still susceptible to air inversions. These inversions trap a layer of stagnant air near the ground, where it is then further loaded with pollutants. These inversions cause haziness, which is caused by moisture, suspended dust, and a variety of chemical aerosols emitted by trucks, automobiles, furnaces, and other sources.

Toxic Air Contaminants

TACs are airborne substances that are capable of causing short-term (acute) and/or long-term (chronic or carcinogenic, i.e., cancer causing) adverse human health effects (i.e., injury or illness). TACs include both organic and inorganic chemical substances. They may be emitted from a variety of common sources including gasoline stations, automobiles, dry cleaners, industrial operations, and painting operations. The current California list of TACs includes approximately 200 compounds, including particulate emissions from diesel-fueled engines.

Hazardous Air Pollutants (HAPs) is a term used by the federal Clean Air Act (FCAA) that includes a variety of pollutants generated or emitted by industrial production activities. Identified as TACs under the California Clean Air Act (CCAA), 10 have been singled out through ambient air quality data as being the most substantial health risk in California. Direct exposure to these pollutants has been shown to cause cancer, birth defects, damage to the brain and nervous system, and respiratory disorders. CARB provides emission inventories for only the larger air basins.

TACs do not have ambient air quality standards because no safe levels of TACs can be determined. Instead, TAC impacts are evaluated by calculating the health risks associated with a given exposure. The requirements of the Air Toxic "Hot Spots" Information and Assessment Act (Assembly Bill [AB] 2588) apply to facilities that use, produce, or emit toxic chemicals. Facilities subject to the toxic emission inventory requirements of the act must prepare and submit toxic emission inventory plans and reports, and periodically update those reports.

Toxic contaminants often result from fugitive emissions during fuel storage and transfer activities and from leaking valves and pipes. For example, the electronics industry, including semiconductor manufacturing, uses highly toxic chlorinated solvents in semiconductor production processes. Sources of air toxics go beyond industry, however. Automobile exhaust also contains toxic air pollutants such as benzene and 1,3-butadiene. The following are health effects related to common TACs:

Acetaldehyde

Acetaldehyde is directly emitted into the atmosphere and is also formed in the atmosphere from photochemical oxidation. Acetaldehyde is generated as exhaust from mobile sources and fuel

combustion from stationary internal combustion engines, boilers, and process heaters. Acetaldehyde is a carcinogen that can also cause chronic non-cancer toxicity in the respiratory system. Symptoms of chronic intoxication of acetaldehyde in humans resemble those of alcoholism. The primary short-term effect of inhalation exposure to acetaldehyde is irritation of the eyes, skin, and respiratory tract. At higher exposure levels, erythematic, coughing, and pulmonary edema, and necrosis may also occur.

Benzene

Approximately 84 percent of the benzene emitted in California comes from motor vehicles, including evaporative leakage and unburned fuel exhaust. Benzene is highly carcinogenic and occurs throughout California. Benzene also has non-cancer health effects. Brief inhalation exposure to high concentrations can cause central nervous system symptoms of nausea, tremors, drowsiness, dizziness, headache, intoxication, and unconsciousness.

Neurological symptoms of inhalation exposure to benzene include drowsiness, dizziness, headaches, and unconsciousness. Ingestion of large amounts of benzene may result in vomiting, dizziness, and convulsions. Exposure to liquid and vapor may irritate the skin, eyes, and upper respiratory tract. Redness and blisters may result from dermal exposure to benzene. Chronic inhalation of certain levels of benzene causes blood disorders because benzene specifically affects bone marrow, which produces blood cells. Aplastic anemia, excessive bleeding, and damage to the immune system (by changes in blood levels of antibodies and loss of white blood cells) may develop. Increased incidence of leukemia (cancer of the tissues that form white blood cells) has been observed in humans occupationally exposed to benzene.

1,3-Butadiene

The majority of 1,3-butadiene emissions comes from incomplete combustion of gasoline and diesel fuels. 1,3-butadiene has been identified as a carcinogen in California. Butadiene vapors at elevated levels cause neurological effects such as blurred vision, fatigue, headache, and vertigo. Dermal exposure to 1,3-butadiene causes a sensation of cold, followed by a burning sensation, and can lead to frostbite. Chronic exposure to 1,3-butadiene via inhalation has been shown to result in an increase in cardiovascular diseases, and increase in the occurrence of leukemia, and an increased incidence of respiratory, bladder, stomach, and lymphatic-hematopoietic cancers.

Carbon Tetrachloride

The primary sources of carbon tetrachloride in California include chemical manufacturing facilities and petroleum refineries. Carbon tetrachloride has been identified as a probable human carcinogen in California. Carbon tetrachloride is also a central nervous system depressant and mild eye and respiratory tract irritant. Acute inhalation and oral exposures to high levels of carbon tetrachloride can damage the liver and kidneys in humans and animals. Symptoms of acute exposure in humans include headache, weakness, lethargy, nausea, and vomiting.

Chromium, Hexavalent

Chromium planting and other metal finishing processes are the primary sources of hexavalent chromium emissions in California. California has identified hexavalent chromium as a carcinogen. Exposure to

inhaled hexavalent chromium may result in lung cancer, and short-term exposure symptoms may include renal toxicity, gastrointestinal hemorrhage, and intravascular hemolysis.

Inhalation exposure of hexavalent exposure targets the respiratory tract. Exposure to very high concentrations of hexavalent chromium can include burns, effects on the respiratory tract such as perforations and ulcerations of the septum, bronchitis, decreased pulmonary function, pneumonia, asthma, and nasal itching and soreness. Chronic human exposure to high levels of hexavalent chromium by inhalation or oral exposure may adversely affect the liver, kidney, and gastrointestinal and immune system.

Para-Dichlorobenzene

The primary sources of para-dichlorobenzene include consumer products such as non-aerosol insect repellents and solid air fresheners. These sources contribute 99 percent of statewide para-dichlorobenzene emissions. In California, para-dichlorobenzene has been identified as a carcinogen. Acute exposure to 1,4-dichlorobenzene via inhalation in humans results in irritation to the eyes, skin, and throat. In addition, long-term inhalation exposure may affect the liver, skin, and central nervous system.

Formaldehyde

Formaldehyde is both directly emitted into the atmosphere and formed in the atmosphere as a result of photochemical oxidation. Formaldehyde is a product of incomplete combustion, and one of the primary sources of formaldehyde is vehicular exhaust. Formaldehyde can also be found in many consumer products as an antimicrobial agent and is used in fumigants and soil disinfectants.

Acute formaldehyde inhalation exposure can result in eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Chronic inhalation exposure to formaldehyde has been associated with respiratory symptoms and eye, nose, and throat irritation. In California, formaldehyde has been identified as a carcinogen, and occupational studies have shown associations between exposure to formaldehyde and increased incidence of lung and nasopharyngeal cancer.

Methylene Chloride

Methylene chloride is a solvent used in paint stripping operations and as a blowing and cleaning agent in the manufacture of polyurethane foam and plastic. Paint removers account for the largest use of methylene chloride in California. Inhalation exposure to extremely high levels of methylene chloride can be fatal to humans. Acute inhalation exposure to high levels of methylene chloride can result in decreased visual, auditory, and psychomotor functions, but these effects are reversible once exposure ceases. Methylene chloride also irritates the nose and throat at high concentrations. The major effects from chronic inhalation exposure to methylene chloride are headaches, dizziness, nausea, and memory loss. Chronic exposure can also lead to bone marrow, hepatic, and renal toxicity. California considers methylene chloride to be carcinogenic.

Perchloroethylene

Perchloroethylene is used as a solvent, primarily in dry cleaning operations. Perchloroethylene is also used in degreasing operations, paints and coatings, adhesives, aerosols, specialty chemical production, printing inks, silicones, rug shampoos and laboratory solvents. Perchloroethylene vapors are irritating to the eyes and respiratory tract and chronic exposure can result in liver toxicity, kidney dysfunction, and neurological disorders. California identifies perchloroethylene as a carcinogen.

Diesel Particulate Matter

DPM is emitted from both mobile and stationary sources. In California, on-road diesel-fueled engines contribute approximately 24 percent of the statewide total, with an additional 71 percent attributed to other mobile sources such as construction and mining equipment, agricultural equipment, and transport refrigeration units. Stationary sources contribute about five percent of total DPM. It should be noted that CARB has developed several plans and programs to reduce diesel emissions such as the Diesel Risk Reduction Plan, the Statewide Portable Equipment Registration Program (PERP), and the Diesel Off-Road Reporting System (DOORS). The PERP and DOORS programs allow owners or operators of portable engines and certain other types of equipment can register their units in order to operate their equipment throughout California without having to obtain individual permits from local air districts.

Diesel exhaust and many individual substances contained in it (including arsenic, benzene, formaldehyde, and nickel) have the potential to contribute to mutations in cells that can lead to cancer. Long-term exposure to diesel exhaust particles poses the highest cancer risk of any TAC evaluated by OEHHA. CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

In its comprehensive assessment of diesel exhaust, OEHHA analyzed more than 30 studies of people who worked around diesel equipment, including truck drivers, railroad workers, and equipment operators. The studies showed these workers were more likely to develop lung cancer than workers who were not exposed to diesel emissions. These studies provide strong evidence that long-term occupational exposure to diesel exhaust increases the risk of lung cancer. Using information from OEHHA's assessment, CARB estimates that diesel particle levels measured in California's air in 2000 could cause 540 "excess" cancers in a population of one million people over a 70-year lifetime. Other researchers and scientific organizations, including the National Institute for Occupational Safety and Health, have calculated cancer risks from diesel exhaust similar to those developed by OEHHA and CARB.

Exposure to diesel exhaust can have immediate health effects. Diesel exhaust can irritate the eyes, nose, throat, and lungs, and it can cause coughs, headaches, lightheadedness, and nausea. In studies with human volunteers, diesel exhaust particles made people with allergies more susceptible to the materials to which they are allergic, such as dust and pollen. Exposure to diesel exhaust also causes inflammation in the lungs, which may aggravate chronic respiratory symptoms and increase the frequency or intensity of asthma attacks.

Diesel engines are a major source of fine particulate pollution. The elderly and people with emphysema, asthma, and chronic heart and lung disease are especially sensitive to fine-particle pollution. Numerous

studies have linked elevated particle levels in the air to increased hospital admissions, emergency room visits, asthma attacks, and premature deaths among those suffering from respiratory problems. Because children's lungs and respiratory systems are still developing, they are also more susceptible than healthy adults to fine particles. Exposure to fine particles is associated with increased frequency of childhood illnesses and can also reduce lung function in children. In California, diesel exhaust particles have been identified as a carcinogen.

Sensitive Receptors

Sensitive populations are more susceptible to the effects of air pollution than is the general population. Sensitive populations (sensitive receptors) that are in proximity to localized sources of toxics are of particular concern. Land uses considered sensitive receptors include residences, schools, playgrounds, childcare centers, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Table 1 lists the distances and locations of sensitive receptors within the Project vicinity. The distances depicted in Table 1 are based on the distance from the Project site to the vicinity sensitive receptors.

Table 1. Nearest Sensitive Receptors

Type	Distance from Project Site at the Nearest (feet)1	Direction from Project Site	Location
Residential Neighborhood	670	East	East of Little John Street
School (Walnut Elementary School)	2,115	Northeast	East of Center Street

Source: [1]Google Earth 2019

2.2 Regulatory Framework

2.2.1 Federal

Clean Air Act

The FCAA was amended in 1990 to address a large number of air pollutants that are known to cause or may reasonably be anticipated to cause adverse effects to human health or adverse environmental effects. 188 specific pollutants and chemical groups were initially identified as HAPs, and the list has been modified over time. The FCAA Amendments included new regulatory programs to control acid deposition and for the issuance of stationary source operating permits.

In 2001, the U.S. Environmental Protection Agency (USEPA) issued its first Mobile Source Air Toxics Rule, which identified 21 mobile source air toxic (MSAT) compounds as being HAPs that required regulation. A subset of six of these MSAT compounds were identified as having the greatest influence on health and included benzene, 1,3-butadiene, formaldehyde, acrolein, acetaldehyde, and DPM. More recently, the USEPA issued a second MSAT Rule in February 2007, which generally supported the findings in the first rule and provided additional recommendations of compounds having the greatest impact on health. The rule also identified several engine emission certification standards that must be implemented. Unlike the

criteria pollutants, toxics do not have National Ambient Air Quality Standards (NAAQS) making evaluation of their impacts more subjective.

National Emissions Standards for Hazardous Air Pollutants (NESHAPs) were incorporated into a greatly expanded program for controlling toxic air pollutants. The provisions for attainment and maintenance of the NAAQS were substantially modified and expanded. Other revisions included provisions regarding stratospheric ozone protection, increased enforcement authority, and expanded research programs.

Section 112 of the FCAA Amendments governs the federal control program for HAPs. NESHAPs are issued to limit the release of specified HAPs from specific industrial sectors. These standards are technology-based, meaning that they represent the best available control technology an industrial sector could afford. The level of emissions controls required by NESHAPs are not based on health risk considerations because allowable releases and resulting concentrations have not been determined to be safe for the general public. The FCAA does not establish air quality standards for HAPs that define legally acceptable concentrations of these pollutants in ambient air.

2.2.2 State

California Air Resources Board

CARB's statewide comprehensive air toxics program was established in 1983 with AB 1807 the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

Diesel Risk Reduction Plan

The identification of DPM as a TAC in 1998 led CARB to adopt the *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles* (Risk Reduction Plan) in October 2000. The Risk Reduction Plan's goals include an 85 percent reduction in DPM by 2020 from the 2000 baseline (CARB 2000). The Risk Reduction Plan includes regulations to establish cleaner new diesel engines, cleaner in-use diesel engines (retrofits), and cleaner diesel fuel.

Truck and Bus Regulation Reducing Emissions from Existing Diesel Vehicles

On December 12, 2008, CARB approved the Truck and Bus Regulation to significantly reduce particulate matter (PM) and oxides of nitrogen (NO_X) emissions from existing diesel vehicles operating in California. The regulation requires diesel trucks and buses that operate in California to be upgraded to reduce emissions. Heavier trucks must be retrofitted with PM filters beginning January 1, 2012, and older trucks must be replaced starting January 1, 2015. By January 1, 2023, nearly all trucks and buses would need to have 2010 model year engines or equivalent.

The regulation applies to nearly all privately and federally owned diesel fueled trucks and buses and to privately and publicly owned school buses with a gross vehicle weight rating greater than 14,000 pounds. Small fleets with three or fewer diesel trucks can delay compliance for heavier trucks by reporting and there are a number of extensions for low-mileage construction trucks, early PM filter retrofits, adding cleaner vehicles, and other situations. Privately and publicly owned school buses have different requirements.

Heavy-Duty Vehicle Idling Emission Reduction Program

The purpose of the CARB ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling is to reduce public exposure to diesel particulate matter and criteria pollutants by limiting the idling of diesel-fueled commercial vehicles.[1] The driver of any vehicle subject to this ATCM is prohibited from idling the vehicle's primary diesel engine for greater than five minutes at any location and is prohibited from idling a diesel-fueled auxiliary power system for more than five minutes to power a heater, air conditioner, or any ancillary equipment on the vehicle if it has a sleeper berth and the truck is located within 100 feet of a restricted area (homes and schools).

CARB Final Regulation Order, Requirements to Reduce Idling Emissions from New and In-Use Trucks, beginning in 2008, would require that new 2008 and subsequent model-year heavy-duty diesel engines be equipped with an engine shutdown system that automatically shuts down the engine after 300 seconds of continuous idling operation once the vehicle is stopped, the transmission is set to "neutral" or "park", and the parking brake is engaged.

2.2.3 Local

South Coast Air Quality Management District

The CCAA provides the SCAQMD with the authority to manage transportation activities at indirect sources and regulate stationary source emissions. Indirect sources of pollution are generated when minor sources collectively emit a substantial amount of pollution. An example would be the motor vehicles at an intersection, a mall, and on highways. As a state agency, CARB regulates motor vehicles and fuels for their emissions.

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1 The *ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling* is codified in Title 13 of the California Code of Regulations, Chapter 10, Section 2485.

The *Air Toxics Control Plan* (March 2000, revised March 26, 2004) is a planning document designed to examine the overall direction of the SCAQMD's air toxics control program. It includes development and implementation of strategic initiatives to monitor and control air toxics emissions. Control strategies that are deemed viable and are within the SCAQMD's jurisdiction will each be brought to the SCAQMD Board for further consideration through the normal public review process. Strategies that are to be implemented by other agencies will be developed in a cooperative effort, and the progress will be periodically reported to the Board.

The SCAQMD has conducted an in-depth analysis of the toxic air contaminants and their resulting health risks for all of Southern California. This study, the *Multiple Air Toxics Exposure Study in the South Coast Air Basin, MATES IV,"* shows that cancer risk has decreased more than 50 percent between MATES III (2008) and MATES IV (2015).

MATES-IV is the most comprehensive dataset documenting the ambient air toxic levels and health risks associated with the Basin emissions. Therefore, MATES-IV study represents the baseline health risk for a cumulative analysis. MATES-IV estimates the average excess cancer risk level from exposure to TACs is less than 400 in one million basin-wide. These model estimates were based on monitoring data collected at 10 fixed sites within the Basin. None of the fixed monitoring sites are within the local area of the Project site. However, MATES-IV has extrapolated the excess cancer risk levels throughout the basin by modeling the specific grids. MATES-IV modeling predicted an excess cancer risk of 427 in one million for the Project area. DPM is included in this cancer risk along with all other TAC sources. DPM accounts for 68 percent of the total risk shown in MATES-IV.

2.3 Health Risk and Hazard Assessment

2.3.1 Thresholds of Significance

In order to determine whether or not a proposed project would cause a significant effect on the environment, the impact of the project must be determined by examining the types and levels of air toxics generated and the associated impacts on factors that affect air quality. While the final determination of significance thresholds is within the purview of the lead agency pursuant to the state CEQA Guidelines, the SCAQMD recommends that the following air pollution thresholds be used by lead agencies in determining whether the proposed Project is significant. If the lead agency finds that the proposed Project has the potential to exceed the air pollution thresholds, the Project should be considered significant. The thresholds for air toxic emissions are as follows.

- Cancer Risk: Emit carcinogenic or toxic contaminants that exceed the maximum individual cancer risk of 10 in one million.
- Non-Cancer Risk: Emit toxic contaminants that exceed the maximum hazard quotient of one in one million.

Cancer risk is expressed in terms of expected incremental incidence per million population. The SCAQMD has established an incidence rate of 10 persons per million as the maximum acceptable incremental cancer risk due to DPM exposure. This threshold serves to determine whether or not a given project has a

potentially significant development-specific and cumulative impact. The 10-in-one-million standard is a very health-protective significance threshold. A risk level of 10 in one million implies a likelihood that up to 10 persons out of one million equally exposed people would contract cancer if exposed continuously (24 hours per day) to the levels of toxic air contaminants over a specified duration of time. This risk would be an excess cancer that is in addition to any cancer risk borne by a person not exposed to these air toxics. To put this risk in perspective, the risk of dying from accidental drowning is 1,000 in a million, which is 100 times more than the SCAQMD's threshold of 10 in one million.

The SCAQMD has also established non-carcinogenic risk parameters for use in HRAs. Noncarcinogenic risks are quantified by calculating a "hazard index," expressed as the ratio between the ambient pollutant concentration and its toxicity or Reference Exposure Level (REL). An REL is a concentration at or below which health effects are not likely to occur. A hazard index less of than one (1.0) means that adverse health effects are not expected. Within this analysis, non-carcinogenic exposures of less than 1.0 are considered less than significant.

2.3.2 Methodology

This HRA evaluates potential health risks associated with the emission of DPM resulting from the implementation of the Proposed Project. As previously described, CARB estimates that about 70 percent of the cancer risk that the average Californian faces from breathing toxic air pollutants stems from diesel exhaust particles.

The air dispersion modeling for the HRA was performed using the USEPA AERMOD dispersion model. AERMOD is a steady-state, multiple-source, Gaussian dispersion model designed for use with emission sources situated in terrain where ground elevations can exceed the stack heights of the emission sources (not a factor in this case). AERMOD requires hourly meteorological data consisting of wind vector, wind speed, temperature, stability class, and mixing height. Surface and upper air meteorological data provided by the SCAQMD for Azusa Meteorological Station was selected as being the most representative meteorology based on proximity to the Project site as well as being within the same SCAQMD source receptor area (SRA). The SCAQMD divides the Basin into 38 SRAs to forecast and report air quality. Both the Project site and the Azusa Meteorological Station are located in SCAQMD SRA 9, known as the East San Gabriel Valley.

Emissions sources in the model include two area sources to represent the loading docks located at two different locations on the Project site (see Figure 1). Additionally, emissions sources in the model include a volume line source (comprised of 42 volume sources) representing the onsite truck circulation at the Project site, and a volume line source (comprised of 28 volume sources) representing the offsite truck circulation extending approximately 1,500 feet to the west of the Project site along Los Angeles Street, as well as approximately 2,550 feet to the east of the Project site along Los Angeles Street. The separated line 2W volume source was employed consistent with the recommendations of the California Air Pollution Control Officers Association (CAPCOA) Health Risk Assessments for Proposed Land Use Projects (2009) document (page 54 of Attachment 1, *Technical Modeling Guidance*), which provides guidance for modeling roads/line sources in AERMOD. This guidance is necessary since AERMOD does not have a pollutant source option directly specific to mobile sources. According to CAPCOA, the best method for

modeling emissions from travelling truck vehicles in AERMOD is to use a series of multiple volume sources. 2W volume sources involves a series of volume sources to approximate a line source. Using the width of the road as the length of the side of a single volume source, the number of volume sources along the length of the road is determined by dividing the length of the road by 2W. The number of volume sources is then determined in order to replicate a mobile source of pollutants traveling a roadway within the AERMOD software. This methodology is consistent with the USEPA *AERMOD User's Guide*. AERMOD can be used to predict the concentrations of pollutants emitted from vehicles on roads. The maximum daily exhaust emissions for all diesel equipment was used to produce an emission rate in terms of grams per second per square meter. Emissions from heavy trucks were assigned a release height of 3.65 meters in order to provide a conservative analysis (i.e., using a higher release height would result in a smaller impact by allowing pollutants to disperse before they affect a receptor).

The estimated number of daily heavy-duty trucks was obtained from KOA (2019). It is noted that the SCAQMD Notice of Preparation comment letter recommends estimating the Project fleet mix based on 0.64 average daily heavy-duty truck trips per 1,000 square feet of proposed industrial warehouse building space. Employing this SCAQMD-recommended metric results in an estimate of 338 heavy-duty truck trips daily (0.64 x 528.710 = 338). However, this analysis is based on an estimate of 557 heavy-duty truck trips daily (349 three- and four-axle heavy-heavy-duty trucks and 208 two-axle medium-heavy-duty trucks) as provided by KOA, and thus is more conservative then recommended by the SCAQMD.

The model was run to obtain the peak 24-hour and annual average concentration in micrograms per cubic meter [$\mu g/m^3$] at nearby sensitive receptors. According to the SCAQMD's Supplemental Guidelines for Preparing Risk Assessments for the Air Toxics "Hot Spots" Information and Assessment Act (AB 2588), air dispersion modeling is required to estimate (a) annual average concentrations to calculate the Maximum Individual Cancer Risk, the maximum chronic hazard index, the zones of impact and (b) peak hourly concentrations to calculate the health impact from substances with acute non-cancer health effects. To achieve these goals, the receptor grid should extend to cover the zone of impact. To achieve these goals, the receptor grid in the model begins at the facility fence line and extends to cover the zone of impact, which is the residential community (consisting of several schools) to the east. Per SCAQMD recommendations, in order "to identify the maximum impacted receptors (i.e., peak cancer risk and peak hazard indices) a grid spacing of 75 meters is used" (SCAQMD recommends that a receptor grid be spaced at 75 meters when analyzing the effects of a facility spanning 25 to 100 acres). The analysis does not miss potential peak concentration levels at any sensitive receptors as the potential peak concentration levels at sensitive receptors are identified through the examination of pollutant concentration contour mapping. Where multiple concentration levels are identified within a single receptor grid, the highest concentration level identified is used for the purpose of determining the health risk within that receptor grid.

Note that the concentration estimates developed using this methodology are considered conservative and are not a specific prediction of the actual concentrations that would occur as a result of the Project at any one point in time. Actual 24-hour and annual average and concentrations are dependent on many variables, particularly the number and type of equipment working at specific distances during time periods of adverse meteorology.

A health risk computation was performed to determine the risk of developing an excess cancer risk calculated on a 70-year lifetime basis, 30-year, and 9-year exposure scenarios. The chronic and carcinogenic health risk calculations are based on the standardized equations contained in the OEHHA Guidance Manual (2015). Only the risk associated with operations of the Proposed Project was assessed as risk associated with Project construction emissions are analyzed in the Project *Air Quality and Greenhouse Gas Assessment* prepared by ECORP.

Based on the OEHHA methodology, the residential inhalation cancer risk from the annual average DPM concentrations are calculated by multiplying the daily inhalation or oral dose, by a cancer potency factor, the age sensitivity factor (ASF), the frequency of time spent at home, and the exposure duration divided by averaging time, to yield the excess cancer risk. These factors are discussed in more detail below. It is important to note that exposure duration is based on continual heavy truck operations at the Project site. Cancer risk must be calculated separately for specified age groups, because of age differences in sensitivity to carcinogens and age differences in intake rates (per kilogram [kg] body weight). Separate risk estimates for these age groups provide a health-protective estimate of cancer risk by accounting for greater susceptibility in early life, including both age-related sensitivity and amount of exposure.

Exposure through inhalation ($Dose_{air}$) are a function of the breathing rate, the exposure frequency, and the concentration of a substance in the air. For residential exposure, the breathing rates are determined for specific age groups, so $Dose_{air}$ is calculated for each of these age groups, third trimester, 0<2, 2<9, 2<16, 16<30 and 16-70 years. To estimate cancer risk, the dose was estimated by applying the following formula to each ground-level concentration:

$$\mathbf{Dose_{air} = (C_{air} * \{BR/BW\} * A * EF * 10^{-6})}$$

Where:

$Dose_{air}$	=	dose through inhalation (mg/kg/day)
C_{air}	=	air concentration (µg/m^3) from air dispersion model
{BR/BW}	=	daily breathing rate normalized to body weight (L/kg body weight – day) (225 L\kg BW-day for 3rd Trimester, 658 L/kg BW-day for 0<2 years, 535 L/kg BW-day for 2<9 years, 452 L/kg BW-day for 2<16 years, 210 L/kg BW-day for 16<30 years, and 185 L/kg BW-day 16<70 years)
A	=	Inhalation absorption factor (unitless [1])
EF	=	exposure frequency (unitless), days/365 days (0.96 [approximately 350 days per year])
10^{-6}	=	conversion factor (micrograms to milligrams, liters to cubic meters)

OEHHA developed ASFs to take into account the increased sensitivity to carcinogens during early-in-life exposure. In the absence of chemical-specific data, OEHHA recommends a default ASF of 10 for the third trimester to age two years, an ASF of 3 for ages two through 15 years to account for potential increased sensitivity to carcinogens during childhood, and an ASF of one for ages 16 through 70 years.

Fraction of time at home (FAH) during the day is used to adjust exposure duration and cancer risk from a specific facility's emissions, based on the assumption that exposure to the facility's emissions are not occurring away from home. OEHHA recommends the following FAH values: from the third trimester to

age <2 years, 85 percent of time is spent at home; from age two through <16 years, 72 percent of time is spent at home; from age 16 years and greater, 73 percent of time is spent at home.

To estimate the cancer risk, the dose is multiplied by the cancer potency factor, the ASF, the exposure duration divided by averaging time, and the frequency of time spent at home (for residents only):

$$\mathbf{Risk_{inh\text{-}res} = (Dose_{air} * CPH * ASF * ED/AT * FAH)}$$

Where:

$Risk_{inh\text{-}res}$	=	residential inhalation cancer risk (potential chances per million)
$Dose_{air}$	=	daily dose through inhalation (mg/kg-day)
CPF	=	inhalation cancer potency factor (mg/kg-day^{-1})
ASF	=	age sensitivity factor for a specified age group (unitless)
ED	=	exposure duration (in years) for a specified age group (0.25 years for 3rd trimester, 2 years for 0<2, 7 years for 2<9, 14 years for 2<16, 14 years for 16<30, 54 years for 16-70)
AT	=	averaging time of lifetime cancer risk (years)
FAH	=	fraction of time spent at home (unitless)

Chronic Non-Cancer Hazard

Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The REL is defined as the concentration at which no adverse non-cancer health effects are anticipated. The following equation was used to determine the non-cancer risk:

$$\mathbf{Hazard\ Quotient = Ci/RELi}$$

Where:

Ci	=	Concentration in the air of substance i (annual average concentration in µg/m^3)
RELi	=	Chronic noncancer Reference Exposure Level for substance i (µg/m^3)

Acute Non-Cancer Hazard

The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts. The equation is as follows:

$$\mathbf{Acute\ HQ = Maximum\ Hourly\ Air\ Concentration\ (\mu g/m^3)\ /\ Acute\ REL\ (\mu g/m^3)}$$

2.3.3 Impact Analysis

Project Risk and Hazard Assessment

CARB identified DPM as a TAC in 1998. Mobile sources (including trucks, buses, automobiles, trains, ships, and farm equipment) are by far the largest source of diesel emissions. The exhaust from diesel engines includes hundreds of different gaseous and particulate components, many of which are toxic. Diesel

exhaust is composed of two phases, either gas or particulate; both contribute to the risk. The gas phase is composed of many of the urban HAPs, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde, and polycyclic aromatic hydrocarbons. The particulate phase has many different types that can be classified by size or composition. The sizes of diesel particulates of greatest health concern are fine and ultrafine particles. These particles may be composed of elemental carbon with adsorbed[2] compounds such as organics, sulfates, nitrates, metals, and other trace elements. Diesel exhaust is emitted from a broad range of on- and off-road diesel engines. As the Project would accommodate daily visits from heavy-duty diesel trucks during operations, an analysis of DPM was performed using the USEPA-approved AERMOD model.

Non-Carcinogenic Hazards

The significance thresholds for TAC exposure requires an evaluation of non-cancer risk stated in terms of a hazard index. Non-cancer chronic impacts are calculated by dividing the annual average concentration by the REL for that substance. The potential for acute non-cancer hazards is evaluated by comparing the maximum short-term exposure level to an acute REL. RELs are designed to protect sensitive individuals within the population. The calculation of acute non-cancer impacts is similar to the procedure for chronic non-cancer impacts.

An acute or chronic hazard index of 1.0 is considered individually significant. The hazard index is calculated by dividing the acute or chronic exposure by the reference exposure level. The highest maximum chronic and acute hazard index at a sensitive receptor associated with DPM emissions from the Project would be 0.0013 and 0.0347, respectively. This concentration would occur at the residential neighborhood located east of the Project site, specifically at the western cul-de-sac of Benbow Street. Therefore, non-carcinogenic hazards are calculated to be within acceptable limits.

Carcinogenic Risk

Vehicle DPM emissions were estimated using emission factors for course particulate matter less than 10 microns in diameter (PM_{10}) generated with the 2017 version of the EMission FACtor model (EMFAC) developed by CARB. EMFAC 2017 is a mathematical model that was developed to calculate emission rates from motor vehicles that operate on highways, freeways, and local roads in California and is commonly used by CARB to project changes in future emissions from on-road mobile sources. The most recent version of this model, EMFAC 2017, incorporates regional motor vehicle data, information and estimates regarding the distribution of vehicle miles traveled by speed, and number of starts per day. The most important improvement in EMFAC 2017 is the integration of the new data and methods to estimate emissions from diesel trucks and buses. The model includes the emissions benefits of the truck and bus rule and the previously adopted rules for other on-road diesel equipment.

For this Project, annual average PM_{10} emission factors were generated by running EMFAC 2017 for vehicles in the Basin within Los Angeles County. EMFAC generates emission factors in terms of grams of

[2]This term is specifically used for gases.

pollutant emitted per vehicle activity and can calculate a matrix of emission factors at specific values of vehicle speed, temperature, and relative humidity. The model was run for speeds traveled on and within the vicinity of the Project site. The vehicle travel speeds for each segment modeled are summarized below.

- Idling (15 minutes per truck) – onsite loading/unloading; and
- five miles per hour – onsite vehicle movement including driving and maneuvering; and
- 35 miles per hour – offsite vehicle movement including driving and maneuvering.

The average PM_{10} emission factors for heavy trucks were calculated based on the annual average emission factors for various exposure periods associated with assumptions for evaluating exposure over three different periods (i.e., 70-, 30-, and 9-year exposure scenarios). The posted speed limit on Los Angeles Street is 40 miles per hour. The average PM_{10} emission factor for heavy trucks traveling 35 miles per hour is greater than those traveling 40 miles per hour. Thus, the use of an emissions factor for trucks traveling 35 miles per hour is conservative.

Based on the AERMOD outputs, the expected annual average diesel PM_{10} emission concentrations at the most exposed sensitive receptor (located at the western cul-de-sac of Benbow Street) resulting from operation of the Project (557 daily heavy-duty truck trips) would be 0.007 $\mu g/m^3$ at the greatest.

Cancer risk calculations for residences are based on 70-, 30-, and 9-year exposure periods while schools are based on a 9-year exposure period. The calculated carcinogenic risk at the sensitive receptor as a result of the Project is depicted in Table 2. As shown, impacts related to cancer risk from heavy trucks would be less than significant at the nearest residences and nearest school.

Table 2. Maximum Operational Health Risk at the Project Vicinity Residential Neighborhoods

Exposure Scenario	Maximum Cancer Risk (Risk per Million)	Significance Threshold (Risk per Million)	Exceeds SCAQMD Significance Threshold?
Residences to the East with Highest Pollutant Concentrations			
70-Year Exposure	3.24	*10*	No
30-Year Exposure	2.73	*10*	No
9-Year Exposure	1.96	*10*	No
Walnut Elementary School to the Northeast			
9-Year Exposure	1.02	*10*	**No**

Source: Refer to **Attachment A** for Model Data Outputs.
Notes: The elementary school is only analyzed for nine years of exposure as students are not expected to attend school beyond those years.

In conclusion, non-carcinogenic hazards resulting from the proposed Project are calculated to be within acceptable limits. Additionally, impacts related to cancer risk from heavy trucks would be less than significant at the nearest residences and nearest school. Therefore, impacts related to health risk from the Project would be less than significant.

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APPENDIX A

Health Risk Calculations and AERMOD Outputs

Health Risk Calculations

Irwindale Industrial Project

DPM Emissions Calculations

On-Site Truck Movement			Avg Speed (mph)	Emission Factor (g/mi)	Daily Truck Trips (round trips)	length (mi)	g/day	g/sec	# sources	EVS
Project Trucks			5	0.063650	557	0.8	2.84E+01	3.28E-04	42	7.82E-06
										7.82E-06

Off-Site Truck Movement			Avg Speed (mph)	Emission Factor (g/mi)	Daily Truck Trips (round trips)	length (mi)	g/day	g/sec		
Project Trucks			35	0.015929	557	0.8	7.10E+00	8.22E-05	28	2.93E-06
										2.93E-06

On-Site Vehicle Idle Emissions		Emission Factor (g/veh/day)	Idling Time (min)	Idling Time (hrs/day)	Daily Trucks	Release Height Above Ground (m)	g/day	g/sec		
Project Trucks		0.004595	15	1.04E-02	279	3.65	1.34E-02	1.55E-07	4	3.86E-08

Sources:

EMFAC2017. PM10 Emission Factors are derived from the Year 2021 Heavy-Duty Truck Fleet Mix

Notes:

The Project will accommodate 557 inbound and outbound truck trips daily. Thus each visting truck results in 2 trips, equating to 279 idling events daily.

DPM Health Risk at Highest Pollutant Concentration Residence East Neighborhood

Risk Calculations

1 Hour Avg Concentration:	0.063
24 Hour Avg Concentration:	0.019
Annual Avg Concentration:	0.007

Cancer Risk

	3rd trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
DOSEair = (Cair*(BR/BW)*A*EF*10^{-6})	1.42397E-06	4.16433E-06	3.38589E-06	2.8606E-06	1.32904E-06	1.1708E-06
Risk = DOSEair * CPF * ASF * ED/AT * FAH	4.75505E-08	1.11247E-06	8.04488E-07	1.35936E-06	2.134440E-07	7.2527E-07

		Risk	in one million
Cancer Risk:	70-year exposure	3.24E-06	**3.24**
	30-year exposure	2.73E-06	**2.73**
	9-year exposure	1.96E-06	**1.96**
Threshold:			10 in one million

	DOSEair		mg/kg-d	Dose through inhalation
	CPF	1.1	$(mg/kg/day)^{-1}$	Cancer Potency Factor for DPM
BR/BW	BR/BW (3rd trimester)	225	L/kg bodyweight-day	Daily Breathing rate normalized to body weight
	BR/BW (0 < 2 years)	658		
	BR/BW (2 < 9 years)	535		
	BR/BW (2 < 16 years)	452		
	BR/BW (16 < 30 years)	210		
	BR/BW (16 < 70 years)	185		
	10^{-6}	1.00E-06		Micrograms to milligrams conversions, liters to cubic meters conversion
	Cair	0.0066	ug/m^3	Concentration in air (ug/m^3), modeled annual average concentration
	A	1		Inhalation absorption factor
	EF	0.96	days/year	Exposure frequency (days/year)
ED	ED (3rd trimester)	0.25	years	Exposure duration (years)
	ED (0 < 2 years)	2		
	ED (2 < 9 years)	7		
	ED (2 < 16, 16 < 30 years)	14		
	ED (16 - 70 years)	54		
	AT	70	years	Averaging time period over which exposure is averaged
ASF	ASF (3rd trimester - 2 years)	10		Age Sensitivity Factor
	ASF (2 - 16 years)	3		
	ASF (16 - 70 years)	1		
FAH	FAH (3rd trimester - 2 years)	0.85		Fraction of time spent at home (unitless)
	FAH (2 - 16 years)	0.72		
	FAH (16 - 70 years)	0.73		

Chronic Noncancer Hazard

Threshold: 1

Hazard Quotient = C_i/REL_i

HQ = **1.32E-03**

C_i	6.60E-03	Concentration (annual average)
REL_i	5	Reference Exposure Level

Acute NonCancer Hazard

Threshold: 1

Acute HQ = Maximum Hourly Concentration/Acute REL

Acute HQ = **3.47E-02**

Max Hourly	6.60E-03
Acute REL (Acrolein)	0.19

DPM Health Risk at Walnut Elementary School

Risk Calculations

1 Hour Avg Concentration:	0.029
24 Hour Avg Concentration:	0.010
Annual Avg Concentration:	0.003

Cancer Risk

	3rd trimester	0<2 years	2<9 years	2<16 years	16<30 years	16<70 years
DOSEair = (Cair*(BR/BW)*A*EF*10^{-6})	5.82534E-07	1.70359E-06	1.38514E-06	1.17025E-06	5.43699E-07	4.7897E-07
Risk = DOSEair * CPF * ASF * ED/AT * FAH	2.28853E-08	5.35414E-07	4.57095E-07	7.72363E-07	1.196137E-07	4.0644E-07

		Risk	in one million
Cancer Risk:	9-year exposure	1.02E-06	**1.02**
Threshold:			10 in one million

	DOSEair		mg/kg-d	Dose through inhalation
	CPF	1.1	$(mg/kg/day)^{-1}$	Cancer Potency Factor for DPM
BR/BW	BR/BW (3rd trimester)	225	L/kg bodyweight-day	Daily Breathing rate normalized to body weight
	BR/BW (0 < 2 years)	658		
	BR/BW (2 < 9 years)	535		
	BR/BW (2 < 16 years)	452		
	BR/BW (16 < 30 years)	210		
	BR/BW (16 < 70 years)	185		
	10^{-6}	1.00E-06		Micrograms to milligrams conversions, liters to cubic meters conversion
	Cair	0.0027	ug/m^3	Concentration in air (ug/m^3), modeled annual average concentration
	A	1		Inhalation absorption factor
	EF	0.96	days/year	Exposure frequency (days/year)
ED	ED (3rd trimester)	0.25	years	Exposure duration (years)
	ED (0 < 2 years)	2		
	ED (2 < 9 years)	7		
	ED (2 < 16, 16 < 30 years)	14		
	ED (16 - 70 years)	54		
	AT	70	years	Averaging time period over which exposure is averaged
ASF	ASF (3rd trimester - 2 years)	10		Age Sensitivity Factor
	ASF (2 - 16 years)	3		
	ASF (16 - 70 years)	1		
FAH	FAH (3rd trimester - 2 years)	1		Fraction of time spent at home (unitless)
	FAH (2 - 16 years)	1		
	FAH (16 - 70 years)	1		

Chronic Noncancer Hazard

Threshold: 1

Hazard Quotient = C_i/REL_i

HQ = **5.40E-04**

C_i 2.70E-03 Concentration (annual average)

REL_i 5 Reference Exposure Level

Acute NonCancer Hazard

Threshold: 1

Acute HQ = Maximum Hourly Concentration/Acute REL

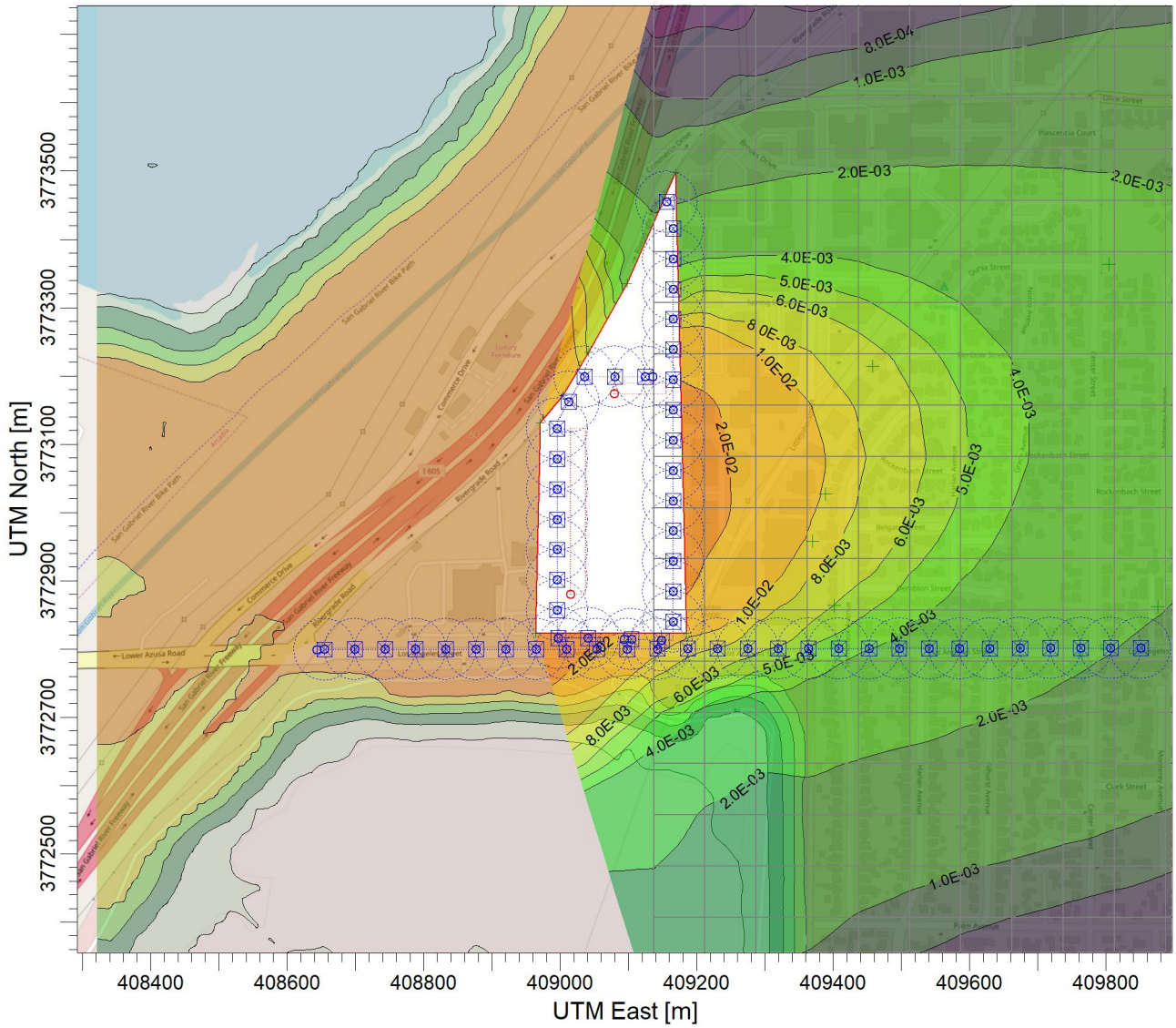
Acute HQ = **1.42E-02**

Max Hourly 2.70E-03

Acute REL (Acrolein) 0.19

PROJECT TITLE:

C:\Lakes\AERMOD View\Irwindale Industrial\Irwindale Industrial.isc



PLOT FILE OF ANNUAL VALUES AVERAGED ACROSS 5 YEARS FOR SOURCE GROUP: ALL ug/m^3

Max: 4.8E-02 [ug/m^3] at (409137.19, 3773157.01)

4.8E-04 5.0E-04 6.0E-04 8.0E-04 1.0E-03 2.0E-03 4.0E-03 5.0E-03 6.0E-03 8.0E-03 1.0E-02 2.0E-02 4.0E-02 4.8E-02

COMMENTS:	SOURCES: **5**	COMPANY NAME:	
	RECEPTORS: **265**	MODELER:	
	OUTPUT TYPE: **Concentration**	SCALE: 1:10,091 0 0.3 km	
	MAX: **4.8E-02 ug/m^3**	DATE: **11/22/2019**	PROJECT NO.:

Control Pathway

AERMOD

Dispersion Options

Titles

C:\Lakes\AERMOD View\Irwindale Industrial\Irwindale Industrial.isc

Dispersion Options

- [x] Regulatory Default
- [ ] Non-Default Options

Dispersion Coefficient

Urban

Population:
Name (Optional):
Roughness Length:

Output Type

- [x] Concentration
- [ ] Total Deposition (Dry & Wet)
- [ ] Dry Deposition
- [ ] Wet Deposition

Plume Depletion

- [ ] Dry Removal
- [ ] Wet Removal

Output Warnings

- [ ] No Output Warnings
- [ ] Non-fatal Warnings for Non-sequential Met Data

Pollutant / Averaging Time / Terrain Options

Pollutant Type

PM10

Averaging Time Options

Hours	1	2	3	4	6	8	12	24
	[x]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[x]

- [ ] Month
- [ ] Period
- [x] Annual

Exponential Decay

Half-life of 4 hrs will be used
Option not available

Terrain Height Options

- [ ] Flat
- [x] Elevated

SO: Meters
RE: Meters
TG: Meters

Flagpole Receptors

- [ ] Yes
- [x] No

Default Height = 0.00 m

Control Pathway

Optional Files

- [ ] Re-Start File
- [ ] Init File
- [ ] Multi-Year Analyses
- [ ] Event Input File
- [x] Error Listing File

Detailed Error Listing File

Filename: Irwindale Industrial.err

Source Pathway - Source Inputs

AERMOD

Area Sources

Source Type	Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation (Optional)	Release Height [m]	Emission Rate [g/ (s-m^2)]	Length of X Side [m]	Length of Y Side [m]	Orientation Angle from North [deg]	Initial Vertical Dim. [m]
AREA	AREA1	409079.00 Loading Dock 1	3773174.00	108.06	3.68	3.86E-8	76.20	15.00	0.00	
AREA	AREA2	409015.00 Loading Dock 2	3772880.00	106.56	3.68	1.16E-7	22.86	243.84	0.00	

Source Pathway - Source Inputs

Line Volume Sources

Source Type: LINE VOLUME
Source: SLINE2 (onsite circulation)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	7.82E-6		409093.52	3772814.46	105.58	3.65
			409165.57	3772812.46	105.40	3.65
			409165.57	3773448.92	110.05	3.65
			409153.56	3773456.93	109.94	3.65

Source Type: LINE VOLUME
Source: SLINE3 (onsite circulation)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	7.82E-6		409135.55	3773198.74	108.64	3.65
			409033.47	3773198.74	108.73	3.65
			408995.45	3773132.69	107.95	3.65
			408995.45	3772822.46	105.69	3.65
			408993.45	3772816.46	105.51	3.65
			409061.50	3772816.46	105.59	3.65

Source Type: LINE VOLUME
Source: SLINE4 (Offsite circulation)

Length of Side [m]	Emission Rate [g/ s]	Building Height [m]	X Coordinate for Points [m]	Y Coordinate for points [m]	Base Elevation [m]	Release Height [m]
22.15	2.93E-6		408643.97	3772799.39	105.50	3.65
			409875.92	3772801.46	109.38	3.65

Source Pathway - Source Inputs

AERMOD

Volume Sources Generated from Line Sources

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE2	L0000085	409104.59	3772814.15	105.58	3.65	4.60E-7	22.15		20.60	2.37
	L0000086	409148.87	3772812.92	105.49	3.65	4.60E-7	22.15		20.60	2.37
	L0000087	409165.57	3772840.05	106.12	3.65	4.60E-7	22.15		20.60	2.37
	L0000088	409165.57	3772884.35	107.22	3.65	4.60E-7	22.15		20.60	2.37
	L0000089	409165.57	3772928.65	107.27	3.65	4.60E-7	22.15		20.60	2.37
	L0000090	409165.57	3772972.95	107.37	3.65	4.60E-7	22.15		20.60	2.37
	L0000091	409165.57	3773017.25	107.58	3.65	4.60E-7	22.15		20.60	2.37
	L0000092	409165.57	3773061.55	107.70	3.65	4.60E-7	22.15		20.60	2.37
	L0000093	409165.57	3773105.85	107.84	3.65	4.60E-7	22.15		20.60	2.37
	L0000094	409165.57	3773150.15	108.20	3.65	4.60E-7	22.15		20.60	2.37
	L0000095	409165.57	3773194.45	108.94	3.65	4.60E-7	22.15		20.60	2.37
	L0000096	409165.57	3773238.75	109.62	3.65	4.60E-7	22.15		20.60	2.37
	L0000097	409165.57	3773283.05	109.67	3.65	4.60E-7	22.15		20.60	2.37
	L0000098	409165.57	3773327.35	109.72	3.65	4.60E-7	22.15		20.60	2.37
	L0000099	409165.57	3773371.65	109.75	3.65	4.60E-7	22.15		20.60	2.37
	L0000100	409165.57	3773415.95	109.98	3.65	4.60E-7	22.15		20.60	2.37
	L0000101	409156.15	3773455.21	110.03	3.65	4.60E-7	22.15		20.60	2.37

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000102	409124.47	3773198.74	108.64	3.65	6.02E-7	22.15		20.60	2.37
	L0000103	409080.17	3773198.74	109.07	3.65	6.02E-7	22.15		20.60	2.37
	L0000104	409035.87	3773198.74	108.72	3.65	6.02E-7	22.15		20.60	2.37
	L0000105	409012.57	3773162.43	108.52	3.65	6.02E-7	22.15		20.60	2.37
	L0000106	408995.45	3773122.70	107.90	3.65	6.02E-7	22.15		20.60	2.37

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE3	L0000107	408995.45	3773078.40	107.39	3.65	6.02E-7	22.15		20.60	2.37
	L0000108	408995.45	3773034.10	107.17	3.65	6.02E-7	22.15		20.60	2.37
	L0000109	408995.45	3772989.80	106.92	3.65	6.02E-7	22.15		20.60	2.37
	L0000110	408995.45	3772945.50	106.54	3.65	6.02E-7	22.15		20.60	2.37
	L0000111	408995.45	3772901.20	106.47	3.65	6.02E-7	22.15		20.60	2.37
	L0000112	408995.45	3772856.90	106.23	3.65	6.02E-7	22.15		20.60	2.37
	L0000113	408996.97	3772816.46	105.58	3.65	6.02E-7	22.15		20.60	2.37
	L0000114	409041.27	3772816.46	106.38	3.65	6.02E-7	22.15		20.60	2.37

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000115	408655.04	3772799.41	105.43	3.65	1.05E-7	22.15		20.60	2.37
	L0000116	408699.34	3772799.49	105.18	3.65	1.05E-7	22.15		20.60	2.37
	L0000117	408743.64	3772799.56	105.04	3.65	1.05E-7	22.15		20.60	2.37
	L0000118	408787.94	3772799.64	105.06	3.65	1.05E-7	22.15		20.60	2.37
	L0000119	408832.24	3772799.71	105.21	3.65	1.05E-7	22.15		20.60	2.37
	L0000120	408876.54	3772799.78	105.26	3.65	1.05E-7	22.15		20.60	2.37
	L0000121	408920.84	3772799.86	105.32	3.65	1.05E-7	22.15		20.60	2.37
	L0000122	408965.14	3772799.93	105.46	3.65	1.05E-7	22.15		20.60	2.37
	L0000123	409009.44	3772800.01	105.48	3.65	1.05E-7	22.15		20.60	2.37
	L0000124	409053.74	3772800.08	105.34	3.65	1.05E-7	22.15		20.60	2.37
	L0000125	409098.04	3772800.15	104.67	3.65	1.05E-7	22.15		20.60	2.37
	L0000126	409142.34	3772800.23	104.62	3.65	1.05E-7	22.15		20.60	2.37
	L0000127	409186.64	3772800.30	104.90	3.65	1.05E-7	22.15		20.60	2.37
	L0000128	409230.94	3772800.38	105.92	3.65	1.05E-7	22.15		20.60	2.37
	L0000129	409275.24	3772800.45	106.93	3.65	1.05E-7	22.15		20.60	2.37

Source Pathway - Source Inputs

AERMOD

Line Source ID	Volume Source ID	X Coordinate [m]	Y Coordinate [m]	Base Elevation [m]	Release Height [m[	Emission Rate [g/s]	Length of Side [m]	Building Height [m]	Initial Lateral Dimencion [m]	Initial Vertical Dimencion [m]
SLINE4	L0000130	409319.54	3772800.53	107.22	3.65	1.05E-7	22.15		20.60	2.37
	L0000131	409363.84	3772800.60	107.30	3.65	1.05E-7	22.15		20.60	2.37
	L0000132	409408.14	3772800.67	107.42	3.65	1.05E-7	22.15		20.60	2.37
	L0000133	409452.44	3772800.75	107.55	3.65	1.05E-7	22.15		20.60	2.37
	L0000134	409496.74	3772800.82	107.71	3.65	1.05E-7	22.15		20.60	2.37
	L0000135	409541.04	3772800.90	107.99	3.65	1.05E-7	22.15		20.60	2.37
	L0000136	409585.34	3772800.97	108.36	3.65	1.05E-7	22.15		20.60	2.37
	L0000137	409629.64	3772801.05	108.60	3.65	1.05E-7	22.15		20.60	2.37
	L0000138	409673.94	3772801.12	108.74	3.65	1.05E-7	22.15		20.60	2.37
	L0000139	409718.24	3772801.19	108.91	3.65	1.05E-7	22.15		20.60	2.37
	L0000140	409762.54	3772801.27	109.02	3.65	1.05E-7	22.15		20.60	2.37
	L0000141	409806.84	3772801.34	109.16	3.65	1.05E-7	22.15		20.60	2.37
	L0000142	409851.14	3772801.42	109.32	3.65	1.05E-7	22.15		20.60	2.37

Receptor Pathway

Receptor Networks

Note: Terrain Elavations and Flagpole Heights for Network Grids are in Page RE2 - 1 (If applicable)
Generated Discrete Receptors for Multi-Tier (Risk) Grid and Receptor Locations for Fenceline Grid are in Page RE3 - 1 (If applicable)

Uniform Cartesian Grid

Receptor Network ID	Grid Origin X Coordinate [m]	Grid Origin Y Coordinate [m]	No. of X-Axis Receptors	No. of Y-Axis Receptors	Spacing for X-Axis [m]	Spacing for Y-Axis [m]
UCART1	409137.19	3772257.01	12	21	75.00	75.00

Discrete Receptors

Discrete Cartesian Receptors

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	409401.47	3772863.91		107.99	
2	409875.62	3772861.91		109.93	
3	409457.48	3773214.03		110.17	
4	409803.60	3773364.08		112.42	

Plant Boundary Receptors

Cartesian Plant Boundary

Primary

Record Number	X-Coordinate [m]	Y-Coordinate [m]	Group Name (Optional)	Terrain Elevations	Flagpole Heights [m] (Optional)
1	409185.40	3772822.72	FENCEPRI	105.12	
2	409168.92	3773498.24	FENCEPRI	110.54	
3	409098.31	3773335.83	FENCEPRI	108.78	
4	409041.82	3773234.62	FENCEPRI	108.26	
5	409004.16	3773171.07	FENCEPRI	108.05	
6	408971.21	3773131.06	FENCEPRI	107.62	
7	408964.15	3772822.72	FENCEPRI	105.58	

Receptor Groups

Record Number	Group ID	Group Description
1	FENCEPRI	Cartesian plant boundary Primary Receptors

Terrain Elevations and Flagpole Heights for Network Grids

Uniform Cartesian Grid

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409137.19	3772257.01	55.30	Option not Selected
	409212.19	3772257.01	54.10	
	409287.19	3772257.01	66.40	
	409362.19	3772257.01	103.90	
	409437.19	3772257.01	105.70	
	409512.19	3772257.01	106.20	
	409587.19	3772257.01	106.20	
	409662.19	3772257.01	106.70	
	409737.19	3772257.01	107.10	
	409812.19	3772257.01	107.50	
	409887.19	3772257.01	107.60	
	409962.19	3772257.01	108.40	
	409137.19	3772332.01	53.80	
	409212.19	3772332.01	53.80	
	409287.19	3772332.01	63.20	
	409362.19	3772332.01	103.50	
	409437.19	3772332.01	105.70	
	409512.19	3772332.01	106.30	
	409587.19	3772332.01	106.70	
	409662.19	3772332.01	106.80	
	409737.19	3772332.01	107.20	
	409812.19	3772332.01	107.60	
	409887.19	3772332.01	108.10	
	409962.19	3772332.01	108.50	
	409137.19	3772407.01	54.00	
	409212.19	3772407.01	55.10	
	409287.19	3772407.01	65.60	
	409362.19	3772407.01	102.50	
	409437.19	3772407.01	105.50	
	409512.19	3772407.01	106.00	
	409587.19	3772407.01	106.90	
	409662.19	3772407.01	107.20	
	409737.19	3772407.01	107.70	
	409812.19	3772407.01	107.90	
	409887.19	3772407.01	108.40	
	409962.19	3772407.01	108.90	
	409137.19	3772482.01	56.00	
	409212.19	3772482.01	55.30	
	409287.19	3772482.01	65.10	
	409362.19	3772482.01	103.00	
	409437.19	3772482.01	105.70	
	409512.19	3772482.01	106.60	
	409587.19	3772482.01	107.30	
	409662.19	3772482.01	107.40	
	409737.19	3772482.01	107.90	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3772482.01	108.20	Option not Selected
	409887.19	3772482.01	109.00	
	409962.19	3772482.01	109.50	
	409137.19	3772557.01	53.80	
	409212.19	3772557.01	54.60	
	409287.19	3772557.01	65.40	
	409362.19	3772557.01	103.40	
	409437.19	3772557.01	106.00	
	409512.19	3772557.01	106.80	
	409587.19	3772557.01	107.50	
	409662.19	3772557.01	107.90	
	409737.19	3772557.01	108.00	
	409812.19	3772557.01	108.30	
	409887.19	3772557.01	108.70	
	409962.19	3772557.01	109.10	
	409137.19	3772632.01	62.00	
	409212.19	3772632.01	65.80	
	409287.19	3772632.01	65.70	
	409362.19	3772632.01	103.50	
	409437.19	3772632.01	106.20	
	409512.19	3772632.01	107.00	
	409587.19	3772632.01	107.80	
	409662.19	3772632.01	108.10	
	409737.19	3772632.01	109.40	
	409812.19	3772632.01	108.90	
	409887.19	3772632.01	109.20	
	409962.19	3772632.01	109.40	
	409137.19	3772707.01	90.60	
	409212.19	3772707.01	77.50	
	409287.19	3772707.01	72.80	
	409362.19	3772707.01	107.00	
	409437.19	3772707.01	107.10	
	409512.19	3772707.01	107.20	
	409587.19	3772707.01	108.00	
	409662.19	3772707.01	108.50	
	409737.19	3772707.01	109.60	
	409812.19	3772707.01	109.30	
	409887.19	3772707.01	109.50	
	409962.19	3772707.01	109.90	
	409137.19	3772782.01	104.80	
	409212.19	3772782.01	105.50	
	409287.19	3772782.01	107.00	
	409362.19	3772782.01	107.40	
	409437.19	3772782.01	107.70	
	409512.19	3772782.01	107.90	
	409587.19	3772782.01	108.50	
	409662.19	3772782.01	108.80	
	409737.19	3772782.01	109.00	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3772782.01	109.30	Option not Selected
	409887.19	3772782.01	109.60	
	409962.19	3772782.01	110.20	
	409137.19	3772857.01	106.70	
	409212.19	3772857.01	106.20	
	409287.19	3772857.01	107.30	
	409362.19	3772857.01	107.60	
	409437.19	3772857.01	108.00	
	409512.19	3772857.01	108.20	
	409587.19	3772857.01	108.70	
	409662.19	3772857.01	108.90	
	409737.19	3772857.01	109.30	
	409812.19	3772857.01	109.80	
	409887.19	3772857.01	110.10	
	409962.19	3772857.01	110.50	
	409137.19	3772932.01	107.10	
	409212.19	3772932.01	107.40	
	409287.19	3772932.01	107.50	
	409362.19	3772932.01	107.80	
	409437.19	3772932.01	108.10	
	409512.19	3772932.01	108.70	
	409587.19	3772932.01	108.80	
	409662.19	3772932.01	109.30	
	409737.19	3772932.01	109.70	
	409812.19	3772932.01	109.80	
	409887.19	3772932.01	110.40	
	409962.19	3772932.01	110.80	
	409137.19	3773007.01	107.60	
	409212.19	3773007.01	107.60	
	409287.19	3773007.01	107.50	
	409362.19	3773007.01	108.20	
	409437.19	3773007.01	108.50	
	409512.19	3773007.01	109.00	
	409587.19	3773007.01	109.00	
	409662.19	3773007.01	109.50	
	409737.19	3773007.01	110.20	
	409812.19	3773007.01	110.60	
	409887.19	3773007.01	110.70	
	409962.19	3773007.01	111.50	
	409137.19	3773082.01	107.60	
	409212.19	3773082.01	108.10	
	409287.19	3773082.01	108.60	
	409362.19	3773082.01	108.50	
	409437.19	3773082.01	108.90	
	409512.19	3773082.01	109.50	
	409587.19	3773082.01	109.40	
	409662.19	3773082.01	109.90	
	409737.19	3773082.01	110.20	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3773082.01	111.00	Option not Selected
	409887.19	3773082.01	111.10	
	409962.19	3773082.01	111.50	
	409137.19	3773157.01	108.00	
	409212.19	3773157.01	108.10	
	409287.19	3773157.01	109.10	
	409362.19	3773157.01	108.70	
	409437.19	3773157.01	109.90	
	409512.19	3773157.01	109.50	
	409587.19	3773157.01	109.90	
	409662.19	3773157.01	110.30	
	409737.19	3773157.01	111.00	
	409812.19	3773157.01	111.50	
	409887.19	3773157.01	111.50	
	409962.19	3773157.01	112.40	
	409137.19	3773232.01	109.50	
	409212.19	3773232.01	110.00	
	409287.19	3773232.01	109.50	
	409362.19	3773232.01	109.00	
	409437.19	3773232.01	109.30	
	409512.19	3773232.01	110.20	
	409587.19	3773232.01	110.10	
	409662.19	3773232.01	110.90	
	409737.19	3773232.01	111.40	
	409812.19	3773232.01	111.60	
	409887.19	3773232.01	111.90	
	409962.19	3773232.01	112.60	
	409137.19	3773307.01	109.60	
	409212.19	3773307.01	110.30	
	409287.19	3773307.01	109.50	
	409362.19	3773307.01	109.30	
	409437.19	3773307.01	110.40	
	409512.19	3773307.01	110.60	
	409587.19	3773307.01	111.00	
	409662.19	3773307.01	111.80	
	409737.19	3773307.01	111.90	
	409812.19	3773307.01	112.20	
	409887.19	3773307.01	112.30	
	409962.19	3773307.01	113.00	
	409137.19	3773382.01	109.70	
	409212.19	3773382.01	110.70	
	409287.19	3773382.01	110.20	
	409362.19	3773382.01	109.90	
	409437.19	3773382.01	110.50	
	409512.19	3773382.01	110.90	
	409587.19	3773382.01	111.70	
	409662.19	3773382.01	111.90	
	409737.19	3773382.01	112.50	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3773382.01	112.60	Option not Selected
	409887.19	3773382.01	113.20	
	409962.19	3773382.01	113.90	
	409137.19	3773457.01	109.90	
	409212.19	3773457.01	111.30	
	409287.19	3773457.01	111.10	
	409362.19	3773457.01	110.20	
	409437.19	3773457.01	110.90	
	409512.19	3773457.01	111.50	
	409587.19	3773457.01	111.70	
	409662.19	3773457.01	112.10	
	409737.19	3773457.01	112.60	
	409812.19	3773457.01	113.10	
	409887.19	3773457.01	114.30	
	409962.19	3773457.01	114.20	
	409137.19	3773532.01	112.90	
	409212.19	3773532.01	111.70	
	409287.19	3773532.01	111.70	
	409362.19	3773532.01	111.60	
	409437.19	3773532.01	112.30	
	409512.19	3773532.01	112.10	
	409587.19	3773532.01	112.30	
	409662.19	3773532.01	112.70	
	409737.19	3773532.01	113.60	
	409812.19	3773532.01	113.60	
	409887.19	3773532.01	113.90	
	409962.19	3773532.01	114.50	
	409137.19	3773607.01	109.60	
	409212.19	3773607.01	113.60	
	409287.19	3773607.01	112.10	
	409362.19	3773607.01	112.50	
	409437.19	3773607.01	112.80	
	409512.19	3773607.01	113.10	
	409587.19	3773607.01	112.90	
	409662.19	3773607.01	113.20	
	409737.19	3773607.01	114.00	
	409812.19	3773607.01	114.00	
	409887.19	3773607.01	114.70	
	409962.19	3773607.01	115.10	
	409137.19	3773682.01	110.50	
	409212.19	3773682.01	109.90	
	409287.19	3773682.01	114.60	
	409362.19	3773682.01	112.50	
	409437.19	3773682.01	113.50	
	409512.19	3773682.01	113.50	
	409587.19	3773682.01	113.40	
	409662.19	3773682.01	114.80	
	409737.19	3773682.01	115.40	

Receptor Pathway

AERMOD

Receptor Network ID	Location: X-Coordinate [m]	Location: Y-Coordinate [m]	Terrain Elevations (Optional)	Flagpole Heights (Optional)
UCART1	409812.19	3773682.01	114.80	Option not Selected
	409887.19	3773682.01	115.80	
	409962.19	3773682.01	116.30	
	409137.19	3773757.01	113.60	
	409212.19	3773757.01	112.00	
	409287.19	3773757.01	109.50	
	409362.19	3773757.01	115.50	
	409437.19	3773757.01	113.40	
	409512.19	3773757.01	114.20	
	409587.19	3773757.01	114.40	
	409662.19	3773757.01	114.90	
	409737.19	3773757.01	115.60	
	409812.19	3773757.01	115.70	
	409887.19	3773757.01	115.90	
	409962.19	3773757.01	116.40	

Meteorology Pathway

AERMOD

Met Input Data

Surface Met Data

Filename: C:\Users\smyers\Desktop\AZUS_V9_ADJU\AZUS_v9.SFC
Format Type: Default AERMET format

Profile Met Data

Filename: C:\Users\smyers\Desktop\AZUS_V9_ADJU\AZUS_v9.PFL
Format Type: Default AERMET format

Wind Speed

☐ Wind Speeds are Vector Mean (Not Scalar Means)

Wind Direction

Rotation Adjustment [deg]:

Potential Temperature Profile

Base Elevation above MSL (for Primary Met Tower): 104.00 [m]

Meteorological Station Data

Stations	Station No.	Year	X Coordinate [m]	Y Coordinate [m]	Station Name
Surface		2012			
Upper Air		2012			
On-Site		2012			

Data Period

Data Period to Process

Start Date: 1/1/2012 Start Hour: 1 End Date: 12/31/2016 End Hour: 24

Wind Speed Categories

Stability Category	Wind Speed [m/s]	Stability Category	Wind Speed [m/s]
A	1.54	D	8.23
B	3.09	E	10.8
C	5.14	F	No Upper Bound

Output Pathway

AERMOD

Tabular Printed Outputs

Short Term Averaging Period	RECTABLE Highest Values Table										MAXTABLE Maximum Values Table	DAYTABLE Daily Values Table
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th		
1	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No
24	■	☐	☐	☐	☐	☐	☐	☐	☐	☐		No

Contour Plot Files (PLOTFILE)

Path for PLOTFILES: Irwindale Industrial.AD

Averaging Period	Source Group ID	High Value	File Name
1	ALL	1st	01H1GALL.PLT
24	ALL	1st	24H1GALL.PLT
Annual	ALL	N/A	AN00GALL.PLT

Sensitive Receptor Summary

C:\Lakes\AERMOD View\Irwindale Industrial\Irwindale Industrial.isc

PM10 - Concentration - Source Group: ALL

Averaging Period	Rank	Peak	Units	Receptor ID	X (m)	Y (m)	ZELEV (m)	ZFLAG (m)	ZHILL (m)	Peak Date, Start Hour
1-HR	1ST	0.07621	ug/m^3	Residence 1	409401.47	3772863.91	107.99	0.00	107.99	6/17/2014, 6
1-HR	1ST	0.02877	ug/m^3	Residence 2	409875.62	3772861.91	109.93	0.00	109.93	6/25/2015, 6
1-HR	1ST	0.06270	ug/m^3	Residence 3	409457.48	3773214.03	110.17	0.00	110.17	7/13/2014, 6
1-HR	1ST	0.02925	ug/m^3	School 4	409803.60	3773364.08	112.42	0.00	112.42	7/13/2014, 6
1-HR	1ST	0.08546	ug/m^3	Residence 5	409369.71	3772957.56	107.70	0.00	107.70	6/25/2015, 6
1-HR	1ST	0.08260	ug/m^3	Residence 6	409388.47	3773026.76	108.60	0.00	108.60	6/24/2015, 6
24-HR	1ST	0.01904	ug/m^3	Residence 1	409401.47	3772863.91	107.99	0.00	107.99	6/27/2015, 24
24-HR	1ST	0.00703	ug/m^3	Residence 2	409875.62	3772861.91	109.93	0.00	109.93	6/27/2015, 24
24-HR	1ST	0.01976	ug/m^3	Residence 3	409457.48	3773214.03	110.17	0.00	110.17	11/12/2014, 24
24-HR	1ST	0.00962	ug/m^3	School 4	409803.60	3773364.08	112.42	0.00	112.42	9/10/2013, 24
24-HR	1ST	0.02699	ug/m^3	Residence 5	409369.71	3772957.56	107.70	0.00	107.70	6/27/2015, 24
24-HR	1ST	0.02695	ug/m^3	Residence 6	409388.47	3773026.76	108.60	0.00	108.60	11/12/2014, 24
ANNUAL		0.00598	ug/m^3	Residence 1	409401.47	3772863.91	107.99	0.00	107.99	
ANNUAL		0.00206	ug/m^3	Residence 2	409875.62	3772861.91	109.93	0.00	109.93	
ANNUAL		0.00660	ug/m^3	Residence 3	409457.48	3773214.03	110.17	0.00	110.17	
ANNUAL		0.00276	ug/m^3	School 4	409803.60	3773364.08	112.42	0.00	112.42	
ANNUAL		0.00931	ug/m^3	Residence 5	409369.71	3772957.56	107.70	0.00	107.70	
ANNUAL		0.00974	ug/m^3	Residence 6	409388.47	3773026.76	108.60	0.00	108.60	

APPENDIX D

Historic Resources Inventory

HISTORIC RESOURCES INVENTORY REPORT FOR THE 13131 LOS ANGELES AVENUE WAREHOUSE PROJECT

City of Irwindale, Los Angeles County, California

PREPARED FOR:

DUKE REALTY
600 East 96th Street, Suite 100
Indianapolis, Indiana 46240
Contact: Michael Weber, Assistant Development Services Manager

PREPARED BY:

Kate Kaiser, MSHP; Erica Nicolay, MA; and Samantha Murray, MA

DUDEK
38 North Marengo Avenue
Pasadena, California 91101

MAY 2019

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ACRONYMS AND ABBREVIATIONS

Acronym/Abbreviation	Definition
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
CRHR	California Register of Historical Resources
DPR	Department of Parks and Recreation
MLD	most likely descendant
NAHC	Native American Heritage Commission
NRHP	National Register of Historic Places
OHP	Office of Historic Preservation
PAIS	Property Assessment Information System (Los Angeles County)
PRC	Public Resources Code
SCCIC	South Central Coastal Information Center

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EXECUTIVE SUMMARY

Dudek was retained by Duke Realty to complete a cultural resources technical report for the 13131 Los Angeles Avenue Warehouse Project (Project) that proposes demolition of the existing on-site development at 13131 Los Angeles Street, Irwindale, California 91706, and construct a concrete tilt-up warehouse building on the 24.6-acre parcel located in southwest City of Irwindale, Los Angeles County, California.

Dudek evaluated the Project site at 13131 Los Angeles Street, Irwindale for historical significance and found that it does not appear eligible for inclusion in the National Register of Historic Places, California Register of Historical Resources, or local register (6Z) due to a lack of significant historical associations and integrity. The buildings and structures on the property are therefore not considered historical resources for the purposes California Environmental Quality Act (CEQA). As such, the proposed Project would have no impact on historical built environment resources for the purposes of CEQA.

No archaeological resources were identified within the proposed Project site as a result of the California Historical Resources Information System records search. No specific archaeological resources or sensitivity concerns were identified by any sources consulted. However, it is always possible that intact archaeological deposits are present at subsurface levels. For these reasons, the Project site should be treated as potentially sensitive for archaeological resources. Management recommendations to reduce potential impacts to unanticipated archaeological resources and human remains during campus construction activities are provided in Section 6.2, Management Recommendations. With the implementation of the proposed mitigation measures, the proposed Project will have a less-than-significant impact on archaeological resources.

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1 INTRODUCTION

Dudek was retained by Duke Realty to complete a cultural resources technical report for a Project that proposes demolition and redevelopment of an approximately 25-acre parcel in the southern part of the City of Irwindale, Los Angeles County, California (Project). The subject property was constructed in 1967 and is located at 13131 Los Angeles Street, City of Irwindale, Los Angeles County, California 91706 (Project site) (Figure 1, Regional Map). Because the buildings on the property are over 45 years old, they are subject to the terms of the California Environmental Quality Act (CEQA) regarding potential impacts to historic properties. In order to assess such impacts, the buildings located at the property must first be evaluated for historical significance. The subject property contains two buildings and several structures over 45 years old requiring recordation and evaluation that has not been previously evaluated for historical significance. This study was conducted in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(a)(2)–(3), and the subject property was evaluated for eligibility for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), and City of Los Angeles Historic-Cultural Monument (HCM) eligibility and integrity requirements. The study involved completion of a California Historical Resources Information System (CHRIS) records search, a pedestrian survey of the proposed Project site, and evaluation of buildings and structures over 45 years of age located on the property for historical significance. The significance evaluation included conducting archival and building development research for each property; outreach with local libraries, historical societies, and advocacy groups; and completion of a historic context.

1.1 Project Description

Duke Realty intends to demolition of the existing on-site development and construct a concrete tilt-up warehouse building on an approximately 25-acre site located at 13131 Los Angeles Street, City of Irwindale, Los Angeles County, California 91706. The proposed 528,710-square-foot building would be 47.5 feet tall, with architectural features extending up to 53.5 feet tall. In addition to the proposed square-foot building, the Project would include a total of approximately 261 vehicle parking spaces, 26 bicycle parking spaces, and 109,330 square feet of landscaping. The site is zoned as M-2 (Heavy Manufacturing) and designated as "Industrial/Business Park" by the City's General Plan. Approvals required for the Project would include Site Plan and Design Review Permit.

1.2 Project Location

The Project location is the 24.9-acre parcel located at 13131 Los Angeles Street, Irwindale, Los Angeles County, California, 91706, Assessor's Identification Number (AIN) 8535-020-007, and the former site of a hollow core concrete manufacturing plant. The Project site is generally located east of the San Gabriel River Freeway (Interstate 605), south of the San Gabriel River Flood Control Channel, southeast of the Santa Fe Dam

Recreation Area, west of Little John Street, and North of Los Angeles Street (Figure 2, Project Location Map). Local street access to the Project site is provided by Los Angeles Street, which borders the proposed Project site to the south. The Project site is situated in a partially developed industrial neighborhood, among several gravel pit and retention pond operations: the Vulcan Materials Plant, United Rock Products Corporation, and Peck Road Gravel Pit, and others.

1.3 Project Personnel

Dudek staff completed all cultural resources technical work in support of this report. Dudek Architectural Historian Kate Kaiser, MSHP, authored this report, prepared the archival research, the Department of Parks and Recreation (DPR) forms, and significance evaluation. Dudek Archaeologist Erica Nicolay, MA, contributed the Record Search section. Senior Architectural Historian, Samantha Murray, MA reviewed this report for quality assurance/quality control. All proposed Project staff meet or exceed the Secretary of the Interior's Professional Qualification Standards (36 Code of Federal Regulations [CFR] Part 61) in architectural history. Preparers' qualifications can be reviewed in Appendix A.

1.4 Regulatory Setting

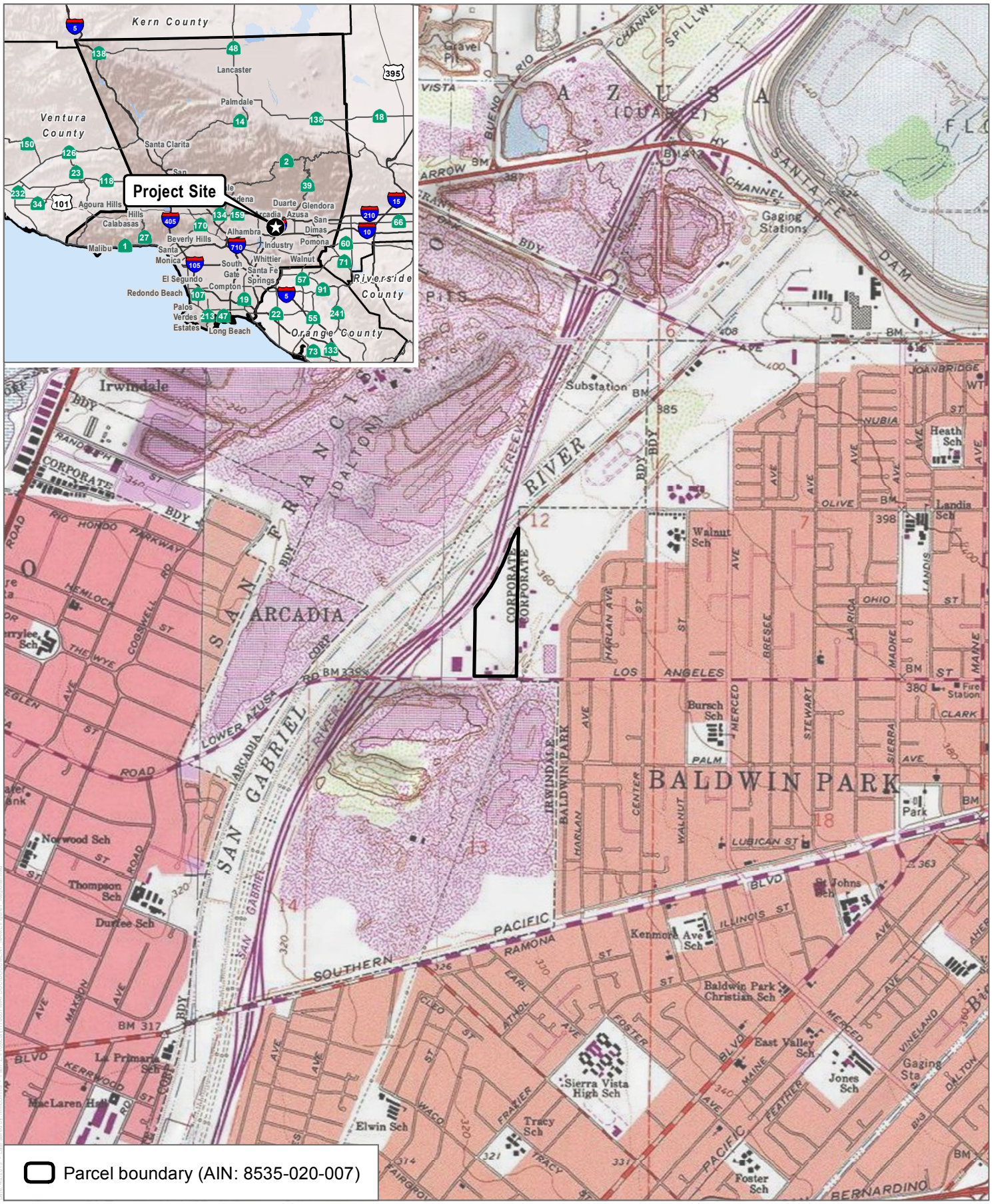
This section includes a discussion of the applicable state and local laws, ordinances, regulations, and standards governing cultural resources, which must be adhered to before and during construction of the proposed Project.

Federal

Although there is no federal nexus for this Project, resources were evaluated in consideration of NRHP designation criteria.

The NRHP is the United States' official list of districts, sites, buildings, structures, and objects worthy of preservation. Overseen by the National Park Service under the U.S. Department of the Interior, the NRHP was authorized under the National Historic Preservation Act, as amended. Its listings encompass all National Historic Landmarks and historic areas administered by the National Park Service.

NRHP guidelines for the evaluation of historic significance were developed to be flexible and to recognize the accomplishments of all who have made significant contributions to the nation's history and heritage. Its criteria are designed to guide state and local governments, federal agencies, and others in evaluating potential entries in the NRHP. For a property to be listed in or determined eligible for listing, it must be demonstrated to possess integrity and to meet at least one of the following criteria:



SOURCE: USGS 7.5-Minute Series Baldwin Park Quadrangle

DUDEK

0 1,000 2,000 Feet

0 285 570 Meters

FIGURE 1

Regional Map

Historic Resources Inventory Report for the 13131 Los Angeles Avenue Warehouse Project

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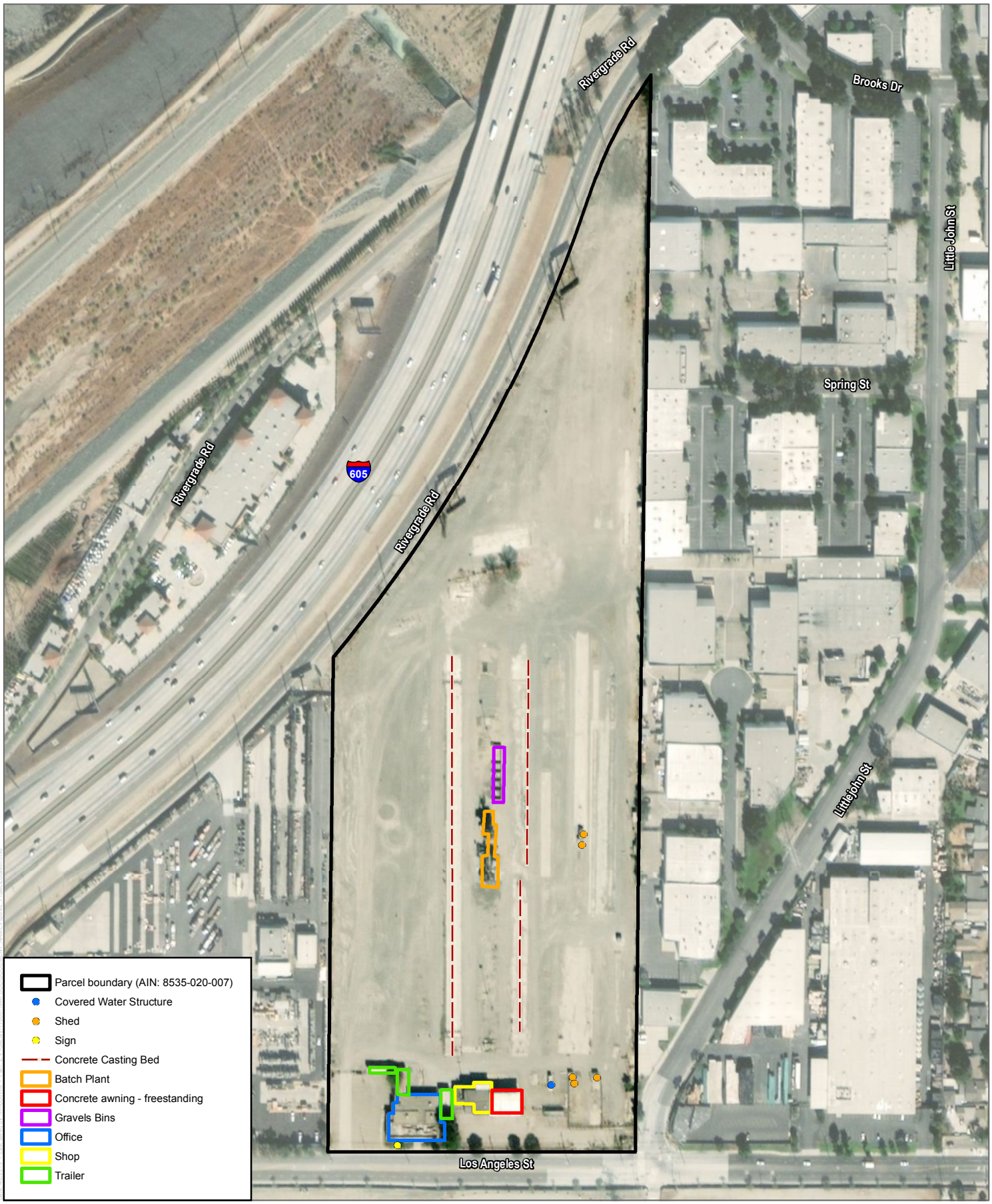

SOURCE: ESRI 2017

DUDEK

0 137.5 275 Feet

0 37.5 75 Meters

FIGURE 2

Project Location Map

Historic Resources Inventory Report for the 13131 Los Angeles Avenue Warehouse Project

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The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded, or may be likely to yield, information important in prehistory or history.

Integrity is defined in NRHP guidance, How to Apply the National Register Criteria, as "the ability of a property to convey its significance. To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity" (Andrus and Shrimpton 2002). Historic properties either retain integrity (convey their significance) or they do not. Within the concept of integrity, the National Register criteria recognizes seven aspects or qualities that define integrity. The seven aspects of integrity are locations, setting, design, materials, workmanship, feeling and association. In order to retain historic integrity "a property will always possess several, and usually most, of the aspects" (Andrus and Shrimpton 2002).

NRHP guidance further asserts that properties be completed at least 50 years ago to be considered for eligibility. Properties completed fewer than 50 years before evaluation must be proven to be "exceptionally important" (criteria consideration G) to be considered for listing.

A historic property is defined as "any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the NRHP maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the NRHP criteria" (36 CFR Section 800.16(i)(1)).

Effects on historic properties under National Historic Preservation Act Section 106 are defined in the assessment of adverse effects in 36 CFR Section 800.5(a)(1).

State

CRHR (California Public Resources Code Sections 5020 et seq.)

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (California Public Resources Code [PRC] Section 5020.1(j)). In 1992, the California legislature established the CRHR "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial adverse change" (PRC Section 5024.1(a)). The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains "substantial integrity," and (ii) meets at least one of the following criteria:

(1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

(2) Is associated with the lives of persons important in our past;

(3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

(4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource less than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see 14 California Code of Regulations Section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed in or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

CEQA

As described further, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historic, and tribal cultural resources:

- PRC Section 21083.2(g) defines "unique archaeological resource."

- PRC Section 21084.1 and CEQA Guidelines Section 15064.5(a) defines "historical resources." In addition, CEQA Guidelines Section 15064.5(b) defines the phrase "substantial adverse change in the significance of an historical resource"; it also defines the circumstances when a project would materially impair the significance of an historical resource.
- PRC Section 21074(a) defines "tribal cultural resources."
- PRC Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.
- PRC Sections 21083.2(b) and 21083.2(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures. Preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

More specifically, under CEQA, a project may have a significant impact on the environment if it may cause "a substantial adverse change in the significance of an historical resource" (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). If a site is either listed in or eligible for listing in the CRHR, included in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)), it is a "historical resource" and is presumed to be historically or culturally significant for the purposes of CEQA (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (PRC Section 21084.1; CEQA Guidelines Section 15064.5(a)).

A "substantial adverse change in the significance of an historical resource"—indicating a significant effect under CEQA—means "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired" (CEQA Guidelines Section 15064.5(b)(1); PRC Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project does any of the following (CEQA Guidelines Section 15064.5(b)(2)):

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to PRC Section 5020.1(k) or its identification in an historical resources survey meeting the requirements of PRC Section 5024.1(g),

unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

Pursuant to these sections, the CEQA inquiry begins with evaluating whether a project site contains any "historical resources," then evaluates whether that project would cause a substantial adverse change in the significance of an historical resource such that the resource's historical significance would be materially impaired.

If it can be demonstrated that a project would cause damage to a unique archaeological resource, the lead agency may require reasonable efforts be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (PRC Sections 21083.2(a), (b), and (c)).

PRC Section 21083.2(g) defines a unique "archaeological resource" as an "archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;
2. Has a special and particular quality such as being the oldest of its type or the best available example of its type; or
3. Is directly associated with a scientifically recognized important prehistoric or historic event or person."

Impacts to non-unique archaeological resources are generally not considered a significant environmental impact (PRC Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)). However, if a non-unique archaeological resource qualifies as a tribal cultural resource (PRC Sections 21074(c), 21083.2(h)); further consideration of significant impacts is required.

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. These procedures, described as follows, are detailed in PRC Section 5097.98.

California Health and Safety Code

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain

human remains can occur until the County Coroner has examined the remains (Health and Safety Code Section 7050.5b). PRC Section 5097.98 outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the NAHC within 24 hours (Health and Safety Code Section 7050.5c). The NAHC would notify the most likely descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains and items associated with Native Americans.

Local

City of Irwindale Resolution 2009-60-2418

In 2009, the City of Irwindale Council members adopted a resolution establishing a local official register of historic resources and adopting two resources to be immediately placed on the local register. Section 3 of *Resolution No. 2009-60-2418: A Resolution of the City Council of the City of Irwindale to Establish a Local Official Register of Historic resources and to Include Our Lady of Guadalupe Catholic Mission, located at 16233 Arrow Highway (APN 8619-012-909), and El Divino Salvador Presbyterian Church, Located at 5116 Irwindale Avenue (APN 8417-029-008) On Said Register* elaborates on the adopted policies to establish a local official register of historic places:

> **Criteria for Listing on the Official Register of Historic Resources.** A building or structure shall be designated a historic building if the City Council finds one or more conditions (including but not limited to the following) exist with reference to such building or structure:
>
> (A) The building or structure proposed for designation is particularly representative of a distinct historical period, type, style, region or way of life.
>
> (B) The building or structure was connected with someone renowned, important, or a local personality.
>
> (C) The building or structure is connected with a business or use which was once common but is now rare.
>
> (D) The building or structure represents the work of a master builder, engineer, designer, and artist or architect whose individual genius influenced his/ her age.
>
> (E) The building or structure is the site of an important historic event or is associated with events that have made a meaningful contribution to the nation, state or city.
>
> (F) The building or structure exemplifies a particular architectural style.
>
> (G) The building or structure exemplifies the best remaining architectural type of a neighborhood.

(H) The construction materials or engineering methods used in the building or structure embody elements of outstanding attention to architectural or engineering design, detail, material or craftsmanship.

2 HISTORIC CONTEXT

2.1 Prehistoric Overview

Numerous chronological sequences have been devised to aid in understanding cultural changes within Southern California. Building on early studies and focusing on data synthesis, Wallace (1955, 1978) developed a prehistoric chronology for the Southern California coastal region that is still widely used today and is applicable to near-coastal and many inland areas. Four periods are presented in Wallace's prehistoric sequence: Early Man, Milling Stone, Intermediate, and Late Prehistoric. Although Wallace's (1955) synthesis initially lacked chronological precision due to a paucity of absolute dates (Moratto 1984), this situation has been alleviated by the availability of thousands of radiocarbon dates that have been obtained by Southern California researchers in the last three decades (Byrd and Raab 2007:217). Several revisions have been made to Wallace's (1955) synthesis using radiocarbon dates and projectile point assemblages (e.g., Koerper and Drover 1983; Koerper et al. 2002; Mason and Peterson 1994).

Horizon I–Early Man (ca. 10,000–6,000 B.C.)

When Wallace defined the Horizon I (Early Man) period in the mid-1950s, there was little evidence of human presence on the Southern California coast prior to 6000 B.C. Archaeological work in the intervening years has identified numerous pre-8000 B.C. sites, both on the mainland coast and the Channel Islands (e.g., Erlandson 1991; Johnson et al. 2002; Moratto 1984; Rick et al. 2001). The earliest accepted dates for occupation are from two of the northern Channel Islands, located off the coast of Santa Barbara. On San Miguel Island, Daisy Cave clearly establishes the presence of people in this area about 10,000 years ago (Erlandson 1991). On Santa Rosa Island, human remains have been dated from the Arlington Springs site to approximately 13,000 years ago (Johnson et al. 2002). Present-day Orange and San Diego counties contain several sites dating to 9,000 to 10,000 years ago (Byrd and Raab 2007; Macko 1998a; Mason and Peterson 1994; Sawyer and Koerper 2006). Known sites dating to the Early Man period are rare in western Riverside County. One exception is the Elsinore site (CA-RIV-2798-B), which has deposits dating as early as 6630 calibrated B.C. (Grenda 1997).

Recent data from Horizon I sites indicate that the economy was a diverse mixture of hunting and gathering, with a major emphasis on aquatic resources in many coastal areas and on Pleistocene lakeshores in eastern San Diego County (see Moratto 1984). Although few Clovis-like or Folsom-like fluted points have been found in Southern California (e.g., Dillon 2002; Erlandson et al. 1987), it is generally thought that the emphasis on hunting may have been greater during Horizon I than in later periods. Common elements in many sites from this period, for example, include leaf-shaped bifacial projectile points and knives, stemmed or shouldered projectile points, scrapers, engraving tools, and crescents (Wallace 1978). Subsistence patterns shifted around 6000 B.C. coincident with the gradual desiccation associated with the onset of the Altithermal climatic regime,

a warm and dry period that lasted for about 3,000 years. After 6000 B.C., a greater emphasis was placed on plant foods and small animals.

Horizon II–Milling Stone (6000–3000 B.C.)

The Milling Stone Horizon of Wallace (1955, 1978) and Encinitas Tradition of Warren (1968) (6000–3000 B.C.) are characterized by subsistence strategies centered on collecting plant foods and small animals. Food procurement activities included hunting small and large terrestrial mammals, sea mammals, and birds; collecting shellfish and other shore species; near-shore fishing with barbs or gorges; the processing of yucca and agave; and the extensive use of seed and plant products (Kowta 1969). The importance of the seed processing is apparent in the dominance of stone grinding implements in contemporary archaeological assemblages, namely milling stones (metates and slabs) and handstones (manos and mullers). Milling stones occur in large numbers for the first time during this period, and are more numerous still near the end of this period. Recent research indicates that Milling Stone Horizon food procurement strategies varied in both time and space, reflecting divergent responses to variable coastal and inland environmental conditions (Byrd and Raab 2007).

Milling Stone Horizon sites are common in the Southern California coastal region between Santa Barbara and San Diego, and at many inland locations, including the Prado Basin in western Riverside County and the Pauma Valley in northeastern San Diego County (e.g., Herring 1968; Langenwalter and Brock 1985; Sawyer and Brock 1999; Sutton 1993; True 1958). Wallace (1955, 1978) and Warren (1968) relied on several key coastal sites to characterize the Milling Stone period and Encinitas Tradition, respectively. These include the Oak Grove Complex in the Santa Barbara region, Little Sycamore in southwestern Ventura County, Topanga Canyon in the Santa Monica Mountains, and La Jolla in San Diego County. The well-known Irvine site (CA-ORA-64) has occupation levels dating between ca. 6000 and 4000 B.C. (Drover et al. 1983; Macko 1998b).

Stone chopping, scraping, and cutting tools made from locally available raw material are abundant in Milling Stone/Encinitas deposits. Less common are projectile points, which are typically large and leaf-shaped, and bone tools such as awls. Items made from shell, including beads, pendants, and abalone dishes, are generally rare. Evidence of weaving or basketry is present at a few sites. Kowta (1969) attributes the presence of numerous scraper-planes in Milling Stone sites to the preparation of agave or yucca for food or fiber. The mortar and pestle, associated with pounding foods such as acorns, were first used during the Milling Stone Horizon (Wallace 1955, 1978; Warren 1968).

Cogged stones and discoidals are diagnostic Milling Stone period artifacts, and most specimens have been found within sites dating between 4000 and 1000 B.C. (Moratto 1984). The cogged stone is a ground stone object with gear-like teeth on its perimeter. Discoidals are similar to cogged stones, differing primarily in their lack of edge modification. Discoidals are found in the archaeological record subsequent to the introduction of the cogged stone. Cogged stones and discoidals are often purposefully buried, and are found mainly in sites along the coastal drainages from southern Ventura County southward, with a few specimens inland at Cajon

Pass, and heavily in Orange County (Dixon 1968; Moratto 1984). These artifacts are often interpreted as ritual objects (Eberhart 1961; Dixon 1968), although alternative interpretations (such as gaming stones) have also been put forward (e.g., Moriarty and Broms 1971).

Characteristic mortuary practices of the Milling Stone period or Encinitas Tradition include extended and loosely flexed burials, some with red ochre, and few grave goods such as shell beads and milling stones interred beneath cobble or milling stone cairns. "Killed" milling stones, exhibiting holes, may occur in the cairns. Reburials are common in the Los Angeles County area, with north-oriented flexed burials common in Orange and San Diego counties (Wallace 1955, 1978; Warren 1968).

Koerper and Drover (1983) suggest that Milling Stone period sites represent evidence of migratory hunters and gatherers who used marine resources in the winter and inland resources for the remainder of the year. Subsequent research indicates greater sedentism than previously recognized. Evidence of wattle-and-daub structures and walls has been identified at several sites in the San Joaquin Hills and Newport Coast area (Mason et al. 1991, 1992, 1993; Koerper 1995; Strudwick 2005; Sawyer 2006), while numerous early house pits have been discovered on San Clemente Island (Byrd and Raab 2007). This architectural evidence and seasonality studies suggest semi-permanent residential base camps that were relocated seasonally (de Barros 1996; Koerper et al. 2002; Mason et al. 1997) or permanent villages from which a portion of the population left at certain times of the year to exploit available resources (Cottrell and Del Chario 1981).

Horizon III–Intermediate (3000 B.C.–A.D. 500)

Following the Milling Stone Horizon, Wallace's Intermediate Horizon and Warren's Campbell Tradition in Santa Barbara, Ventura, and parts of Los Angeles counties, date from approximately 3000 B.C. to A.D. 500 and are characterized by a shift toward a hunting and maritime subsistence strategy, along with a wider use of plant foods. The Campbell Tradition (Warren 1968) incorporates David B. Rogers' (1929) Hunting Culture and related expressions along the Santa Barbara coast. In the San Diego region, the Encinitas Tradition (Warren 1968) and the La Jolla Culture (Moriarty 1966; Rogers 1939, 1945) persist with little change during this time.

During the Intermediate Horizon and Campbell Tradition, there was a pronounced trend toward greater adaptation to regional or local resources. For example, an increasing variety and abundance of fish, land mammal, and sea mammal remains are found in sites along the California coast during this period. Related chipped stone tools suitable for hunting are more abundant and diversified, and shell fishhooks become part of the tool kit during this period. Larger knives, a variety of flake scrapers, and drill-like implements are common during this period. Projectile points include large side-notched, stemmed, and lanceolate or leaf-shaped forms. Koerper and Drover (1983) consider Gypsum Cave and Elko series points, which have a wide distribution in the Great Basin and Mojave deserts between ca. 2000 B.C. and A.D. 500, to be diagnostic of this period. Bone tools, including awls, were more numerous than in the preceding period, and the use of asphaltum adhesive was common.

Mortars and pestles became more common during this period, gradually replacing manos and metates as the dominant milling equipment. Hopper mortars and stone bowls, including steatite vessels, appeared in the tool kit at this time as well. This shift appears to correlate with the diversification in subsistence resources. Many archaeologists believe this change in milling stones signals a shift away from the processing and consuming of hard seed resources to the increasing importance of the acorn (e.g., Glassow et al. 1988; True 1993). It has been argued that mortars and pestles may have been used initially to process roots (e.g., tubers, bulbs, and corms associated with marshland plants), with acorn processing beginning at a later point in prehistory (Glassow 1997) and continuing to European contact.

Characteristic mortuary practices during the Intermediate Horizon and Campbell Tradition included fully flexed burials, placed face down or face up, and oriented toward the north or west (Warren 1968). Red ochre was common, and abalone shell dishes were infrequent. Interments sometimes occurred beneath cairns or broken artifacts. Shell, bone, and stone ornaments, including charmstones, were more common than in the preceding Encinitas Tradition. Some later sites include Olivella shell and steatite beads, mortars with flat bases and flaring sides, and a few small points. The broad distribution of steatite from the Channel Islands and obsidian from distant inland regions, among other items, attest to the growth of trade, particularly during the latter part of this period. Recently, Raab and others (Byrd and Raab 2007) have argued that the distribution of Olivella grooved rectangle (OGR) beads marks "a discrete sphere of trade and interaction between the Mojave Desert and the southern Channel Islands."

Horizon IV–Late Prehistoric (A.D. 500–Historic Contact)

In the Late Prehistoric Horizon (Wallace 1955, 1978), which lasted from the end of the Intermediate (ca. A.D. 500) until European contact, there was an increase in the use of plant food resources in addition to an increase in land and sea mammal hunting. There was a concomitant increase in the diversity and complexity of material culture during the Late Prehistoric, demonstrated by more classes of artifacts. The recovery of a greater number of small, finely chipped projectile points, usually stemless with convex or concave bases, suggests an increased usage of the bow and arrow rather than the atlatl (spear thrower) and dart for hunting. Other items include steatite cooking vessels and containers, the increased presence of smaller bone and shell circular fishhooks, perforated stones, arrow shaft straighteners made of steatite, a variety of bone tools, and personal ornaments made from shell, bone, and stone. There is also an increased use of asphalt for waterproofing and as an adhesive.

Many Late Prehistoric sites contain beautiful and complex objects of utility, art, and decoration. Ornaments include drilled whole Venus clam (*Chione* spp.) and drilled abalone (*Haliotis* spp.). Steatite effigies become more common, with scallop (*Pecten* spp. and *Argopecten* spp.) shell rattles common in middens. Mortuary customs are elaborate and include cremation and interment with abundant grave goods. By A.D. 1000, fired clay smoking pipes and ceramic vessels began to appear at some sites (Drover 1971, 1975; Meighan 1954). The

scarcity of pottery in coastal and near-coastal sites implies ceramic technology was not well developed in that area, or that ceramics were obtained by trade with neighboring groups to the south and east. The lack of widespread pottery manufacture is usually attributed to the high quality of tightly woven and watertight basketry that functioned in the same capacity as ceramic vessels.

Another feature typical of Late Prehistoric period occupation is an increase in the frequency of obsidian imported from the Obsidian Butte source in Imperial County, California. Obsidian Butte was exploited after ca. A.D. 1000 when it was exposed by the receding waters of Holocene Lake Cahuilla (Wilke 1978). A Late Prehistoric period component of the Elsinore site (CA-RIV-2798-A) produced two flakes that originated from Obsidian Butte (Grenda 1997; Towner et al. 1997). Although about 16% of the debitage at the Peppertree site (CA-RIV-463) at Perris Reservoir is obsidian, no sourcing study was done (Wilke 1974). The site contains a late Intermediate to Late Prehistoric period component, and it is assumed that most of the obsidian originated from Obsidian Butte. In the earlier Milling Stone and Intermediate periods, most of the obsidian found at sites within Riverside County came from northern sources, primarily the Coso volcanic field. This appears to be the case within Prado Basin and other interior sites that have yielded obsidian (e.g., Grenda 1995; Taşkiran 1997). The presence of Grimes Canyon (Ventura County) fused shale at Southern California archaeological sites is also thought to be typical of the Late Prehistoric period (Demcak 1981; Hall 1988).

During this period, there was an increase in population size accompanied by the advent of larger, more permanent villages (Wallace 1955). Large populations and, in places, high population densities are characteristic, with some coastal and near-coastal settlements containing as many as 1,500 people. Many of the larger settlements were permanent villages in which people resided year-round. The populations of these villages may have also increased seasonally.

In Warren's (1968) cultural ecological scheme, the period between A.D. 500 and European contact is divided into three regional patterns. The Chumash Tradition is present mainly in the region of Santa Barbara and Ventura counties; the Takic or Numic Tradition is present in the Los Angeles, Orange, and western Riverside counties region; and the Yuman Tradition is present in the San Diego region. The seemingly abrupt changes in material culture, burial practices, and subsistence focus at the beginning of the Late Prehistoric period are thought to be the result of a migration to the coast of peoples from inland desert regions to the east. In addition to the small triangular and triangular side-notched points similar to those found in the desert regions in the Great Basin and Lower Colorado River, Colorado River pottery and the introduction of cremation in the archaeological record are diagnostic of the Yuman Tradition in the San Diego region. This combination certainly suggests a strong influence from the Colorado Desert region.

In Los Angeles, Orange, and western Riverside counties, similar changes (introduction of cremation, pottery, and small triangular arrow points) are thought to be the result of a Takic migration to the coast from inland desert regions. This Takic or Numic Tradition was formerly referred to as the "Shoshonean wedge" or

"Shoshonean intrusion" (Warren 1968). This terminology, used originally to describe a Uto-Aztecan language group, is generally no longer used to avoid confusion with ethnohistoric and modern Shoshonean groups who spoke Numic languages (Heizer 1978; Shipley 1978). Modern Gabrielino/Tongva, Juaneño, and Luiseño in this region are considered the descendants of the prehistoric Uto-Aztecan, Takic-speaking populations that settled along the California coast during this period or perhaps somewhat earlier.

2.2 Ethnographic Context

Based on evidence presented through past archaeological investigations, the Gabrielino appear to have arrived in the Los Angeles Basin around 500 B.C. Surrounding native groups included the Chumash and Tataviam to the northwest, the Serrano and Cahuilla to the northeast, and the Juaneño and Luiseño to the southeast.

The names by which Native Americans identified themselves have, for the most part, been lost and replaced by those derived by the Spanish people administering the local Missions. These names were not necessarily representative of a specific ethnic or tribal group, and traditional tribal names are unknown in the post-Contact period. The name "Gabrielino" was first established by the Spanish from the San Gabriel Mission and included people from the established Gabrielino area as well as other social groups (Bean and Smith 1978; Kroeber 1925). Many modern Native Americans commonly referred to as Gabrielino identify themselves as descendants of the indigenous people living across the plains of the Los Angeles Basin and refer to themselves as the Tongva (King 1994). This term is used here in reference to the pre-Contact inhabitants of the Los Angeles Basin and their descendants.

The Tongva established large, permanent villages along rivers and streams, and lived in sheltered areas along the coast. Tongva lands included the greater Los Angeles Basin and three Channel Islands, San Clemente, San Nicolas, and Santa Catalina and stretched from the foothills of the San Gabriel Mountains to the Pacific Ocean. Tribal population has been estimated to be at least 5,000 (Bean and Smith 1978), but recent ethnohistoric work suggests a much larger population, approaching 10,000 (O'Neil 2002). Archaeological sites composed of villages with various sized structures have been identified through the Los Angeles Basin. Within the permanent village sites, the Tongva constructed large, circular, domed houses made of willow poles thatched with tule, each of which could hold upwards of 50 people (Bean and Smith 1978). Other structures constructed throughout the villages probably served as sweathouses, menstrual huts, ceremonial enclosures, and communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996).

The largest, and best documented, ethnographic Tongva village in the vicinity was that of Yanga (also known as Yaangna, Janga, and Yabit), which was in the vicinity of the downtown Los Angeles (McCawley 1996:56–57; NEA and King 2004). This village was reportedly first encountered by the Portola expedition in 1769. In 1771, Mission San Gabriel was established. Yanga provided a large number of the recruitments to this mission;

however, following the founding of the Pueblo of Los Angeles in 1781, opportunities for local paid work became increasingly common, which had the result of reducing the number of Native American neophytes from the immediately surrounding area (NEA and King 2004). Mission records indicate that 179 Gabrielino inhabitants of Yanga were recruited to San Gabriel Mission (King 2000:65; NEA and King 2004:104). Based on this information, Yanga may have been the most populated village in the Western Gabrielino territory. Second in size, and less thoroughly documented, the village of Cahuenga was located slightly closer, just north of the Cahuenga Pass

Father Juan Crespi passed through the area near this village on August 2–3, 1769. The pertinent sections from his translated diary are as follows:

> Sage for refreshment is very plentiful at all three rivers and very good here at the Porciúncula [the Los Angeles River]. At once on our reaching here, eight heathens came over from a good sized village encamped at this pleasing spot among some trees. They came bringing two or three large bowls or baskets half-full of very good sage with other sorts of grass seeds that they consume; all brought their bows and arrows but with the strings removed from the bows. In his hands the chief bore strings of shell beads of the sort that they use, and on reaching the camp they threw the handfuls of these beads at each of us. Some of the heathens came up smoking on pipes made of baked clay, and they blew three mouthfuls of smoke into the air toward each one of us. The Captain and myself gave them tobacco, and he gave them our own kind of beads, and accepted the sage from them and gave us a share of it for refreshment; and very delicious sage it is for that purpose.
>
> We set out at a half past six in the morning from this pleasing, lush river and valley of Our Lady of Angeles of La Porciúncula. We crossed the river here where it is carrying a good deal of water almost at ground level, and on crossing it, came into a great vineyard of grapevines and countless rose bushes having a great many open blossoms, all of it very dark friable soil. Keeping upon a westerly course over very grass-grown, entirely level soils with grand grasses, on going about half a league we came upon the village belonging to this place, where they came out to meet and see us, and men, women, and children in good numbers, on approaching they commenced howling at us though they had been wolves, just as before back at the spot called San Francisco Solano. We greeted them and they wished to give us seeds. As we had nothing at hand to carry them in, we refused [Brown 2001:339–341, 343].

The environment surrounding the Tongva included mountains, foothills, valleys, deserts, riparian, estuarine, and open and rocky coastal eco-niches. Like most native Californians, acorns (the processing of which was established by the early Intermediate Period) were the staple food source. Acorns were supplemented by the roots, leaves, seeds, and fruits of a wide variety of flora (e.g., islay, cactus, yucca, sages, and agave). Fresh

water and saltwater fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed (Bean and Smith 1978:546; Kroeber 1925; McCawley 1996).

Tools and implements used by the Tongva to gather and collect food resources included the bow and arrow, traps, nets, blinds, throwing sticks and slings, spears, harpoons, and hooks. Trade between the mainland and the Channel Islands Groups was conducted using plank canoes as well as tule balsa canoes. These canoes were also used for general fishing and travel (McCawley 1996).

The collected food resources were processed food with hammerstones and anvils, mortars and pestles, manos and metates, strainers, leaching baskets and bowls, knives, bone saws, and wooden drying racks. Catalina Island steatite was used to make ollas and cooking vessels (Blackburn 1963; Kroeber 1925; McCawley 1996).

The Chinigchinich cult, centered on the last of a series of heroic mythological figures, was the basis of religious life at the time of Spanish contact. The Chinigchinich cult not only provided laws and institutions, but it also taught people how to dance, which was the primary religious act for this society. The Chinigchinich religion seems to have been relatively new when the Spanish arrived. It was spreading south into the Southern Takic groups even as Christian missions were being built. This cult may be the result of a mixture of native and Christian belief systems and practices (McCawley 1996).

Inhumation of deceased Tongva was the more common method of burial on the Channel Islands while neighboring mainland coast people performed cremation (Harrington 1942; McCawley 1996). Cremation ashes have been found buried within stone bowls and in shell dishes (Ashby and Winterbourne 1966), as well as scattered among broken ground stone implements (Cleland et al. 2007). Supporting this finding in the archaeological record, ethnographic descriptions have provided an elaborate mourning ceremony. Offerings varied with the sex and status of the deceased (Johnston 1962; McCawley 1996; Reid 1926). At the behest of the Spanish missionaries, cremation essentially ceased during the post-Contact period (McCawley 1996).

Crespi later returned north of the Project site, moving southeast through the Cahuenga Pass on January 16, 1770. He identifies the two villages located on the 1938 Kirkman-Harriman historical Los Angeles map. Here he noted (Brown 2001:663):

> The mountains make an opening on the southwest of the plain, and in a depression at the foot of it we saw a stream, or ponded up water, at which there were two villages belonging to the very good heathens of this place, who came unarmed as soon as they saw us in order to greet us, and were very happy to see us again. They brought us some gruel, and the chief of one village guided us through the aforesaid opening in the southwestern range; and we came into a small hollow, in which upon two sides we came across a good deal of water, with a good deal of small watering places of the small hollow of *Los Santos Martires San Cleto y San Marcelino*, the Holy Martyrs Saint Cletus and Saint Marcellinus.

2.3 Historic Context

Spanish Period (1769–1822)

Spanish explorers had conducted sailing expeditions along the coast of Southern California as early as the 1500s. Juan Rodríguez Cabríllo stopped in 1542 at present-day San Diego Bay, on an expedition seeking the Northwest Passage. In present-day California, Cabríllo and his crew explored the shorelines of Catalina Island as well as San Pedro and Santa Monica. Much of the present California and Oregon coastline was mapped and recorded by Spanish naval officer Sebastián Vizcaíno from 1602 to 1603. Vizcaíno's crew also landed on Catalina Island and at San Pedro and Santa Monica, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabríllo and Vizcaíno (Bancroft 1885; Cutter 1978; Gumprecht 2001).

The 1769 expedition by Captain Gaspar de Portolá marked the beginning of California settlement. The official historic period began just after the king of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. Portolá and his expedition forces established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July of 1769, while Portolá was exploring Southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823 (Bancroft 1885; Cutter 1978; Gumprecht 2001).

Mission San Gabriel Arcángel, in San Gabriel Valley (modern day Alhambra), was established in 1771 as the fourth mission. The original 1771 mission was destroyed in a flash flood and a new mission was built in 1776. El Pueblo de Nuestra Señora la Reina de Los Ángeles, further west, was established in 1781 to support Mission San Gabriel Arcángel. Like many other Spanish occupations, the mission used Spanish military forces to compel the local Tongva population into the mission's service, baptizing them as neophytes and renaming them the Gabrieliños. The San Gabriel Mission lands extended from Los Angeles east as far as San Bernardino de Sena Estancia (1810), and the San Bernardino Valley, including present day Irwindale, would have been under Mission San Gabriel Arcángel control (Caughey and Caughey 1977; Gumprecht 2001).

Mexican Period (1822–1848)

After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Dallas 1955; Fogelson 1993).

Though the subject property itself was not claimed in a land grant, Mexican governors established extensive land grants throughout interior California during the Mexican Period, in part to wrest secular control away

from the Spanish Missions and to give land as a reward to soldiers in lieu of pension. Land grants were also a way to disperse the population away from the more settled coastal areas and take advantage of cattle and agricultural industry. North of the subject property, Mexican governor Juan Alvarado awarded Rancho El Susa to Luis Arenas and Rancho Azusa de Duarte to Andres Duarte in 1841. Just three years later, Arenas partitioned and sold Rancho El Susa and Arenas' one-third interest in Rancho San Jose to the east, to Englishman and merchant Henry Dalton, and Dalton renamed his acquired lands Rancho Azusa de Dalton. Rancho de la Puente was awarded to John Rowland in 1842; with its original boundary described as extending to Luis Arenas' lands, but in practice extended no further than present-day Ramona Boulevard/San Bernardino Road (Figure 3). All awarded land grants, however, neglected the region in the floodplain of the San Gabriel River, likely due to its rocky and gravelly terrain, which was useless for cattle raising, orchards, or farming (Bancroft Library 1843, 1846, 1852; Caughey and Caughey 1977; Dallas 1955; Lewis Publishing Co. 1889; Zerneke 2009).

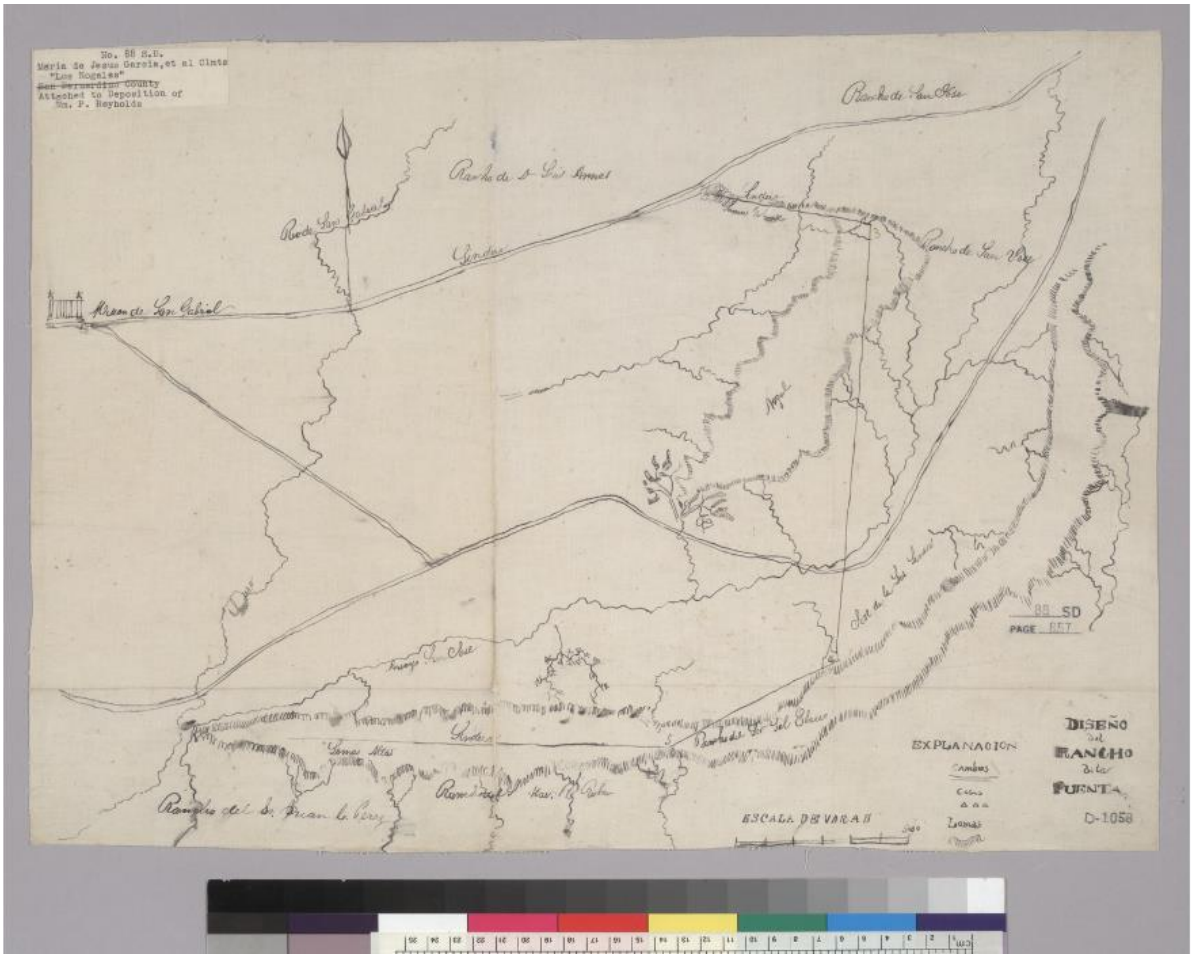

Figure 3. Diseño del Rancho de la Puente, 1852 (Maps of Private Land Grant Cases of California Collection. Bancroft Library, University of California Berkeley)

American Period (1848–Present)

The Mexican-American War from 1846 to 1848 ended with Mexico ceding the Alta California lands to the United States, and the establishment of land ownership via court orders and surveys soon followed. In 1849, Gregorio Fraijo came to California from Sonora, Mexico, likely to participate in the Gold Rush. By the Census of 1850, he was working as an "overseer" somewhere in Los Angeles County. In 1852, Fraijo is recorded a marrying his second wife at the Plaza Church in Los Angeles. In the intervening years, Fraijo supposedly returned to live near Mission San Juan Capistrano, where he and his wife are recorded as godparents. According to the Henry Dalton diaries, Fraijo bought land in Rancho Azusa from Henry Dalton and raised barley. In October 1889, Gregorio Fraijo was issued a land patent on present-day Irwindale Avenue between Arrow Highway and Cypress Avenue. Fraijo and his family settled there, supposedly cultivating corn. Facundo Ayon, also from Sonora Mexico and also a patron of San Juan Capistrano at the same time as Fraijo, settled in the Irwindale area as well in the 1890s. Fraijo and Ayon's children intermarried and they are regarded as the founding families of the community "Sonora Town" (Ancestry 2019; Arvizu 2009; Broggie 2011; Caughey and Caughey 1977; Daily Courier 1889; GLO 1889; Petersen 2016; Sullivan 2007; Vásquez 1995).

Though a local legend indicates that the town was named Irwindale after a man with the surname Irwin tricked Sonora town residents out of their San Gabriel River water rights in 1899. Another legend indicates that the name Irwindale was just a mistake as the 1895 Sonora Town Post Office was dedicated to California governor William Irwin, causing some confusion over the sign and the new name was used. The name "Irwindale" first appeared in newspapers as the name for the community in 1896, in conjunction with advertisements for properties to be located near the Southern Pacific "Irwindale Station." Subsequent mentions are for an Irwindale Land and Water Company operating from the Irwindale Post Office and Irwindale's participation in the Azusa-Covina-Glendora Fruit exchange, which controlled all of the lemons and oranges shipped from Irwindale on the Southern Pacific (Broggie 2011; Covina Argus 1901; LAT 1896, 1901; Sullivan 2007).

After the turn of the 19th century, the introduction of and increasing reliance on the automobile drove the need for new, paved roads in Los Angeles County. New construction methods also relied on concrete as building trends turned towards "skyscrapers" and modernist architecture. As a result, construction aggregate, including gravel, crushed rock, and sand, for concrete and road asphalt was in high demand. High quality aggregate was discovered in the San Gabriel River floodplain, however, early transportation equipment was insufficient for transporting loads of heavy rock more than 20 miles west to Los Angeles. As automobiles became more sophisticated and rail spurs were constructed, transporting the aggregate from the Irwindale area became more feasible. In 1908, Joseph Kincaid purchased land just outside of Irwindale for aggregate mining company Union Rock Company. By 1910, The Santa Fe Rail line had allowed the construction of the Kincaid Railway Station to allow Kincaid to ship aggregate (Broggie 2011; Petersen 2016; Sullivan 2007).

Aggregate from Irwindale was involved in several major projects as Los Angeles architects began to require concrete for Art Deco decoration and modernist structures such as the Port of Los Angeles (1899–1910) Colorado Street Bridge (1912), Million Dollar Theater (1917), the Memorial Coliseum (1923), The Biltmore Hotel (1923), Los Angeles City Hall (1928), the Hollywood Bowl (1929), the Los Angeles Union Passenger Terminal (1939) the Metropolitan Water District Aqueduct (1933–1939), and nearly every major highway or interstate in Southern California. A great deal of the aggregate was also shipped out of the Port of Los Angeles for use in other national projects. From 1923 to the beginning of the Great Depression two thousand train carloads of rock per month originated from Irwindale, serving six companies: Kincaid's Union Rock Company, Pacific Rock & Gravel Company, Reliance Rock Company, Builders Concrete Rock Company, the Consolidated Rock Company and Vulcan Materials (Broggie 2011; Petersen 2016; Sullivan 2007).

A response to the major Los Angeles floods in 1939, the future of aggregate in San Gabriel River floodplain was changed when the U.S. Army Corps of Engineers began a flood control project, the Santa Fe Dam, in 1941. Work on the dam dwindled and halted in 1943 due to World War II and did not resume until 1946. The dam was completed in 1949, and as a result, more development of the San Gabriel River valley could be safely allowed. More mining companies began to occupy the river basin, creating the 17 large pits for which the area is now known. These include companies such as Vulcan Materials, Hanson Aggregate, CalMat, Vulcan Reliance (Largo), Reliance sand and Gravel Company, Heavy Duty Shop, and Durbin (Broggie 2011).

The communities around Irwindale were quickly filling out and the post-World War II years brought a population boom to Southern California as veterans settled in suburban Los Angeles. Towns such as west Azusa, West Covina, Duarte, and Baldwin Park threatened to annex Irwindale, which was ideal for aggregate mining due to its unincorporated status. Rather than face high taxes if annexed by another city, mining companies in Irwindale approached town leaders, and were a driving force in Irwindale's incorporation. With West Covina and Duarte drafting annexation papers, the City of Irwindale incorporated in 1957, the 56th incorporated city in Los Angeles County (Broggie 2011; Sullivan 2007).

In 1965, at the current location of the MillerCoors brewery, the San Gabriel Valley Speedway (also called the 605 Speedway) opened. NASCAR sportsman stock car, motorcycle, drag, and "funny car" racing were prevalent, highlighting car culture for Irwindale, but also bringing attention to its location among the noisy and dusty gravel pits just south of it. Other car racing venues also operated in the 1960s and 1970s including the Irwindale Raceway (also Irwindale Speedway) at Irwindale Avenue between Foothill Boulevard and Arrow Highway, and the San Gabriel Drag Strip. Between 1968 and 1969, the Foothill Freeway (later Interstate 210) was extended through Irwindale just north of the San Gabriel Valley Speedway site connecting Irwindale, Azusa, and Duarte to Pasadena and Interstate 5. The Speedway was closed in 1977, and the MillerCoors brewery took over the location for their 220-acre brewery, which began operations in 1980 (Arcadia Tribune 1968; Broggie 2011; LAT 1969, 1977, 1980; 2001; SBCS 1966; Sullivan 2007).

In 1987, the Los Angeles Raiders no longer wanted to use the Memorial Coliseum and looked to relocate. Irwindale made an offer and a $10 million cash, nonrefundable, "earnest" money payment to build a state-of-the-art football stadium in a reclaimed mining pit. This was the formerthe CalMat Reliance Pit, located immediately north of Interstate 210/Foothill Freeway. Affectionately called the Raider Crater, the site was never realized, as Los Angeles City Council demanded an Environmental Impact Study for the stadium project, which was not completed until 1989. Owner Al Davis kept City of Irwindale's $10 million cash payment and promptly took the team to Oakland (Broggie 2011; LAT 1987a, 1987b, 1990a; Petersen 2016).

The 1990s were characterized by City of Irwindale's efforts to reclaim its abandoned mining pits for development (Figure 4). Beginning in 1990, the City of Irwindale called for filling in inactive mining pits. A report indicated that over 50% of the city's non-public lands were occupied by mining operations, and another city official is quoted as saying that the 17 largest aggregate pits may represent closer to 70% of the land. In 1996, a reclaimed quarry (ironically filled in with used tires) became home to the Toyota Speedway, successor to the Irwindale Raceway a drag racing strip from the 1960s and 1970s. Irwindale Business Center is on 107 acres of reclaimed mining pit, opened in 2001. Most recently in 2013, the City attracted Huy Fong Foods, to build a Sriracha sauce factory on a reclaimed pit. Large gravel mining operations are still active in Irwindale, however and the city retains many of its original mines (Broggie 2011; LAT 1990b, 2001; Petersen 2016; Sullivan 2007).

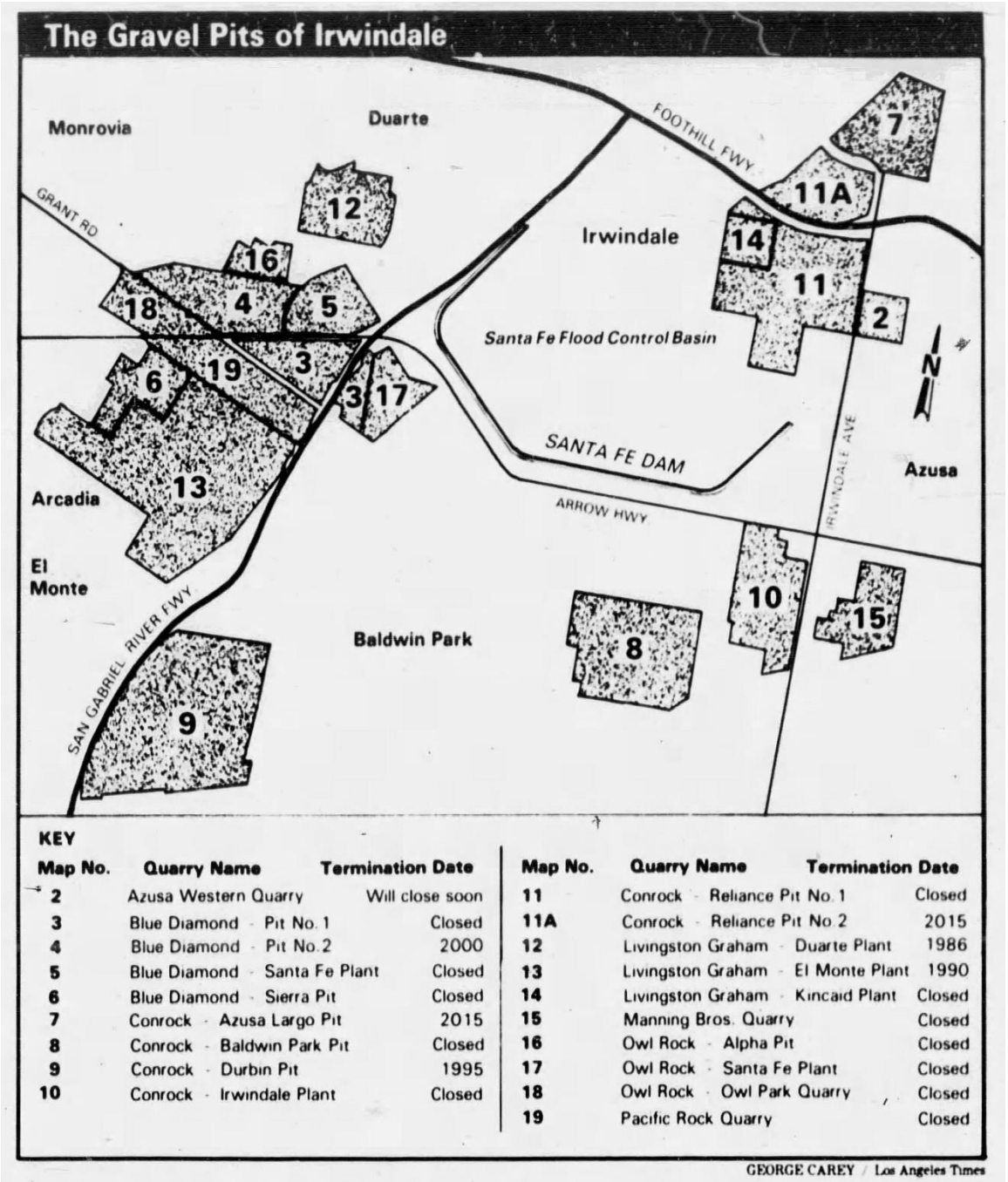

Figure 4. Map of gravel mining pits around Irwindale slated for redevelopment, with projected dates listed. Subject property is closest to No 9, Conrock Durbin Pit (LAT 1984)

2.4 Overview of the Subject Property

In 1946, Henry Nagy and Arthur Hintz founded West Allis Concrete Products in West Allis, Wisconsin. Their business found a foothold and enjoyed the post-World War II building boom. By 1951, the company was entertaining contracts for multiple sports arenas, large department stores, and state and county buildings, which in turn forced them to expand across the state. In 1953, Nagy ventured to Germany to purchase the equipment and patents to a precast concrete manufacturing machine called a Hollowcore extruder. The Hollowcore extruder was capable of producing new hollow-core precast concrete product that allowed a manufacturer to produce long spans of unbroken precast concrete slabs, which Nagy named "Spancrete." Nagy's Spancrete product and success inspired several Spancrete franchises across the US (MWJS 2009).

One such exclusive Spancrete franchise went Arizona Sand & Rock Company. The Arizona Sand & Rock Company was a subsidiary of the California Portland Cement Company and the Consolidated Rock Products Company (Conrock). California Portland Cement Company was founded in Los Angeles in 1891 and had multiple plants in Los Angeles, Compton, and Mojave. Conrock incorporated in 1929 to combine Reliance Rock Company, Consumers' Rock and Gravel Company, Union Rock Company, and their respective subsidiaries, which had over 20- plants in the Los Angeles regions, at least four of which were located in the San Gabriel River basin where Irwindale would be (Figure 5). This included Lake Shangri La, now called the Durbin Pit, just south of the subject property, built in 1923 by the Los Angeles Rock and Gravel Company, which was eventually absorbed into Conrock. The Arizona Sand & Rock Company based in Phoenix, founded in 1927, became a subsidiary of California Portland Cement Company in 1960 to manufacture pre-stressed concrete out of Phoenix. In 1963, Arizona Sand & Rock Company won the exclusive franchise for manufacturing Spancrete products. After producing Spancrete in Phoenix for a few years, the Arizona Sand & Rock Company, under Conrock, opened a California Spancrete plant in Irwindale called "Spancrete of California." (Arizona Republic 1960, 1963; LAT 1929, 1972).

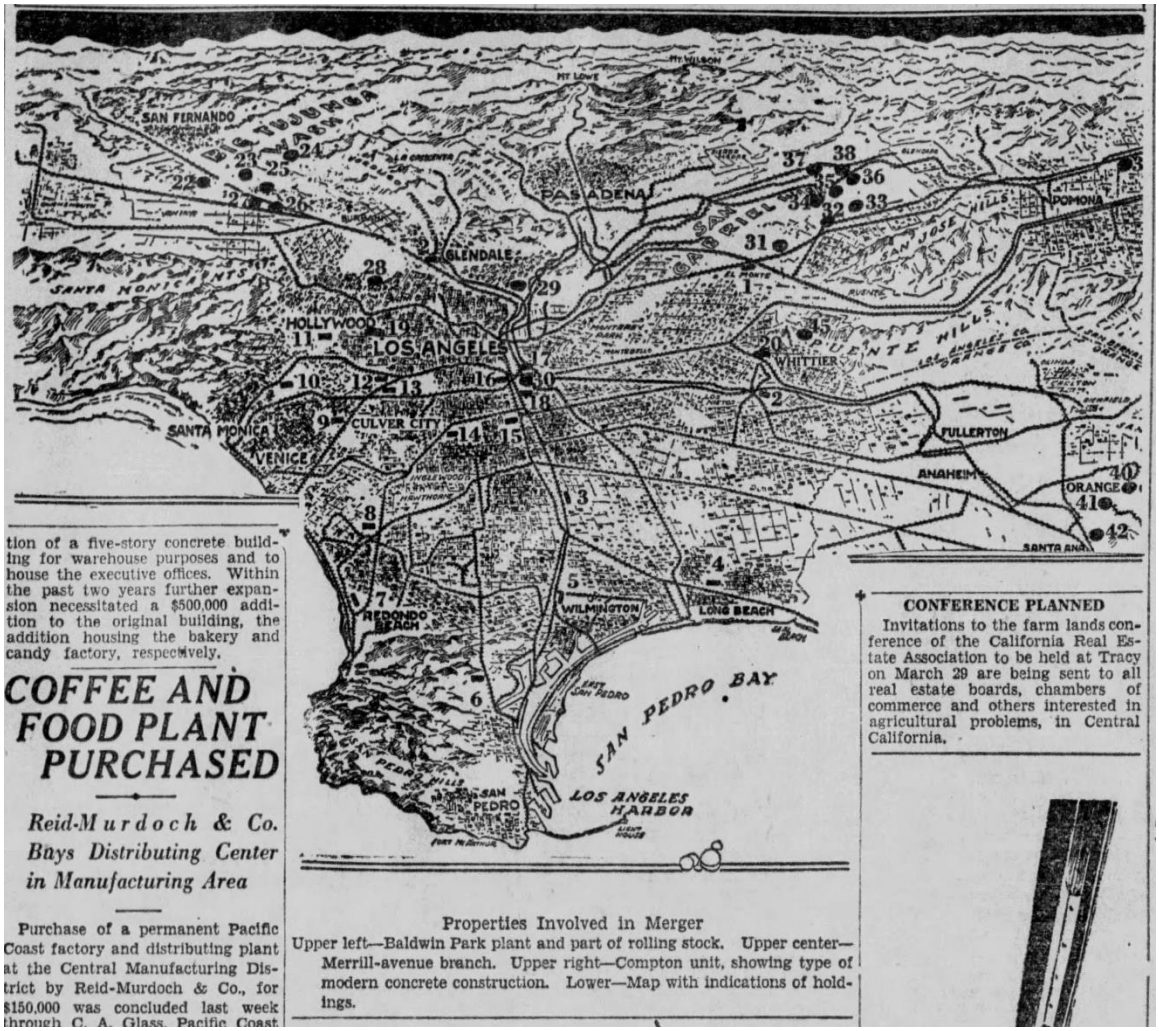

Figure 5. Map of ConRock's holdings in Los Angeles region after merger, 1929 (LAT 1929)

Acquiring and Planning the Site

In 1963, the Cities of Irwindale upheld a zoning ruling that reserved 50 acres including the subject property and surrounding lots from residential development, stating that the area was not suitable for residential development and that the City of Irwindale wished to leave the space available for more gravel and rock operations. In 1965, Conrock opened its new Durbin Plant at 13000 Los Angeles Avenue, just south of where the subject property at local fishing and recreation spot, Lake Shangri-La. After the pit was converted to industrial use, it was renamed the Durbin Pit. In 1967, Conrock also purchased the title to 13131 Los Angeles Street across the street. Though Conrock is on the lease and original 1967 deed, the site is quickly referred to as and ownership changed to Spancrete of California (ISN 1965; LAT 1963, 1972).

Spancrete of California enlisted Wilbur H. Griest Jr. as architect for the office and Ted Anvick as structural engineer for the office and remaining portions of the site including the weld shop, and concrete casting beds (Figure 6). The original permits for the Spancrete Plant were filed in 1967 with Consolidated Rock as the original owner, and Spancrete of California listed as contractor. These original permits included the grading of the site (Permit 1585), construction of the Office building (Permit LA Co. 1629-67), construction of the Shop (Permit LA Co. 1628-67), construction of the gravel bins (Permit LA Co. 1657-67), construction of the concrete casting beds (Permit LA Co. 1585-67), and construction of the batch plant (Permit LA Co. 1658-67). Spancrete, the hollow core concrete product, was used in the construction of the Office, Weld Shop, and Aggregate bins; however, these Spancrete precast panels were produced by Arizona Sand & Rock Company, rather than being produced at the Project site (City of Irwindale 1967).

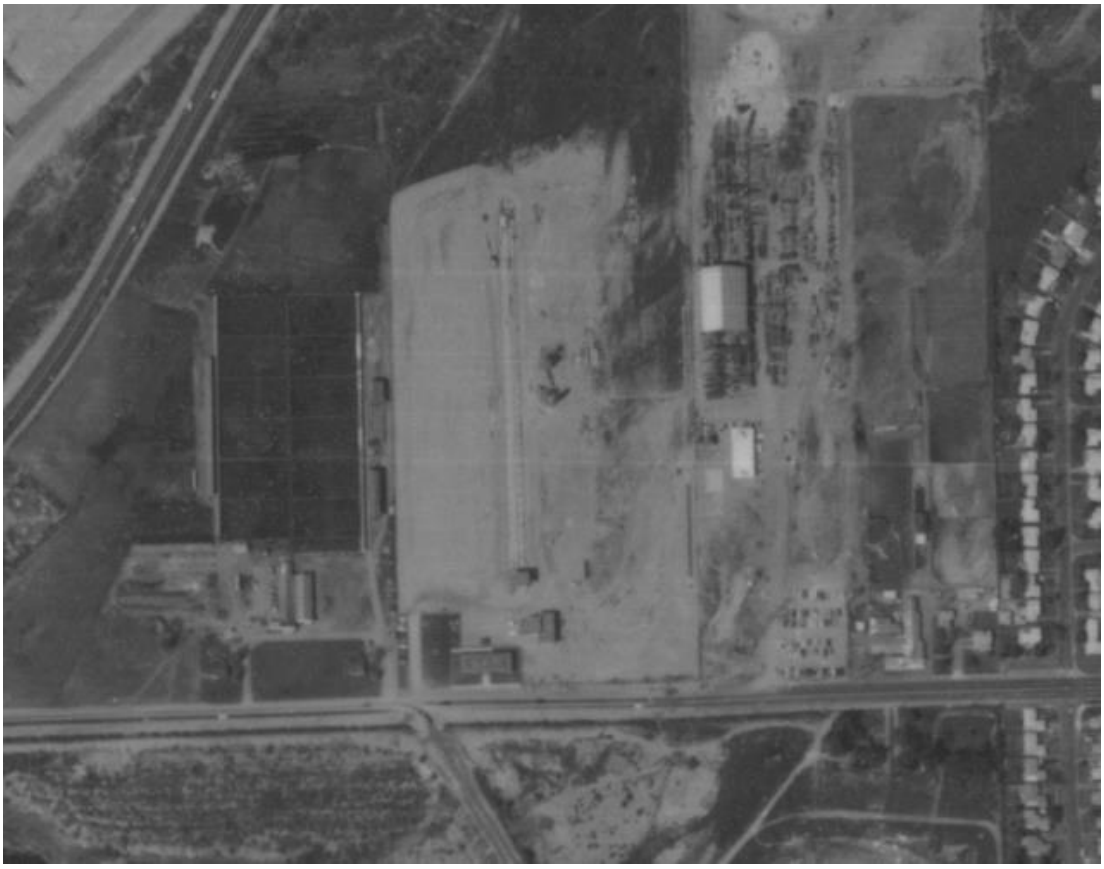

Figure 6. Aerial view of the subject property, 1968 (Teledyne Geotronics 1968)

The site proceeded as Spancrete of California for many years. In 1999, Hanson Spancrete Pacific purchased the Irwindale Spancrete of California plant, and continued to manufacture hollow core precast concrete until 2010. In 2010, there is a brief period where the owner is listed as Heidelberg Cement group, then Clark Pacific is listed as owner from 2013 to 2017 (Leymaster 2018).

Alterations

The City of Irwindale Building and Safety Division has recorded alteration permits for the subject property at 13131 Los Angeles St, Irwindale that enumerate mechanical permits, electrical work, plumbing, new signs, HVAC, and interior alterations. Notable exterior alterations are listed below:

- Installation of two 1000-gallon gasoline tanks and piping, 1968 (Permit LA County 1901-68)
- Heating and Air Conditioning systems added to the main office (Permit LA County 1770-68)
- Addition of 14 square foot (sf) light fixture, manufactured by Aladdin Signs,1971 (Permit 3045-71)
- Added a 75000 sf, 1-story, addition immediately north of the original office building. Constructed with tilt-up, precast concrete masonry walls, manufactured by Tomax and Spancrete, 1976 (Permit 6107-76)
- Added two 40-foot tall light poles and four 30-foot light poles (Permit 0399B-79)
- Added 40 foot lighting standards and flood lights throughout site, manufactured by Pacific Regional Lighting, 1980 (Permit 1089A-86)
- Enclosed the plaza area between existing office building, wings, and office addition, 1986 (Permit 6941A-86)
- Added cast aluminum anodized lettering, "Spancrete of California," to the west elevation exterior wall, 1986 (Permit 7312A-86)
- New 4,000-gallon tank and piping, 1986 (Permit 7386A-86)
- Demolished underground gasoline tank, 2003 (Permit B397470)
- Demolished underground gasoline tank, 2004 (Permit B00-001-767)
- Demolished four highway-adjacent billboards, 2010 (Permit B00-004-728 through 731)

Architects and Engineers

Wilbur H. "Bud" Griest Jr., Architect (1933-?)

Wilbur H. Griest Jr., was born in 1933 in Los Angeles, California. He earned his Bachelor of Architecture from University of Texas in 1957. Griest became a registered architect in Texas in 1961, but then returned to the greater Los Angeles region in the mid-1960s. Details about Griest's early career are unknown, but in 1967, he established his own architecture firm in Pasadena: W.H. Griest Jr., Architect. In 1969, he became a partner at Jenkins & Griest. In 1982, he served as president of the American Institute of Architects (AIA) Pasadena and Foothill Chapter. In 1986, he was serving as the director of Campus Architects & Engineers for University of California Los Angeles (UCLA). Griest's career after 1986 is unclear and he may have retired after working for UCLA (Gane 1970; LAT 1975a, 1982, 1986).

Principle works of Griest include the following (Gane 1970; LAT 1975a):

- Spancrete of California, Irwindale, 1968
- Plaster Tenders & Laborers Union Hall No 436, Pasadena, 1969
- George L. Throop Co., Pasadena, 1969
- La Granada Medical Building, La Canada, 1969
- 20 W. Green Street, Pasadena, 1970
- El Mayor apartment complex, Cypress, 1970
- Sheriff's Substation, Montrose, 1971
- Townhouse Sequoia condominium development, Rosemead, 1975

Theodore E. Anvick, Engineer (1929-2016)

Theodore E. Anvick was born in Eureka, California. He studied at Oregon State University and earned his civil engineering bachelor's degree in 1951, then his master's degree in Structural Engineering in 1954. Anvick started his own civil engineering firm in 1966 in Arcata, and worked throughout California as a civil and structural engineer working with seismic retrofits, vibration, and tilt-up concrete format buildings. Anvick also worked on hundreds of private-owner seismic retrofits of historic Victorians in the Arcata and Eureka area (ETS 2016; LAT 1971, 1975b, 1988, 1995).

Anvick's projects in the greater Los Angeles area include the following:

- Spancrete of California, Irwindale, 1968
- Six schools, Glendale Unified School District (rebuild and seismic remediation), Glendale, 1971
- Anaheim Stadium (seismic retrofit), Anaheim, 1975
- Santa Monica Pier (rebuild), San Monica, 1988
- Municipal Pier (rebuild), Redondo Beach, 1995

2.5 Architectural Style of the Subject Property

Mid-Century Modern (1933–1965)

Mid-Century Modern style is reflective of International and Bauhaus styles popular in Europe in the early 20th century. This style and its living designers (e.g., Mies Van der Rohe and Gropius) were disrupted by WWII and moved to the United States. During WWII, the United States established itself as a burgeoning manufacturing and industrial leader, with incredible demand for modern buildings to reflect modern products

in the mid-20th century. As a result, many industrial buildings are often "decorated boxes"—plain buildings with applied ornament to suit the era and appear more modern without detracting from the importance of the activity *inside* the building. Following WWII, the United States had a focus on forward thinking, which sparked architectural movements like Mid-Century Modern. Practitioners of the style were focused on the most cutting-edge materials and techniques. Architects throughout Southern California implemented the design aesthetics made famous by early Modernists like Richard Neutra and Frank Lloyd Wright, who created a variety of modern architectural forms throughout Southern California. Like other buildings of this era, Mid-Century Modern buildings had to be quickly assembled, and use modern materials that could be mass-produced (McAlester 2013; Morgan 2004).

Key character-defining features of the Mid-Century Modern style include (Gebhard and Winter 2003; McAlester 2013):

- Low, boxy, horizontal proportions;
- Mass-produced materials;
- Flat, smooth sheathing;
- Flat roofed without coping at roof line; flat roofs hidden behind parapets;
- Lack of exterior decoration or abstract geometrical motif;
- Simple windows (metal or wood);
- Industrially plain doors;
- Large window groupings;
- Commonly asymmetrical; and
- Whites, buffs, and pale pastel colors.

3 BACKGROUND RESEARCH

3.1 California Historical Resources Information System Records Search

On March 20, 2019, Dudek completed a search of the CHRIS at the SCCIC, located on the campus of California State University, Fullerton. This search included mapped prehistoric and historic archaeological resources and historic built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Additional consulted sources included historical maps of the Project site, the NRHP, the CRHR, the California Historic Property Data File, and the lists of California State Historical Landmarks, California Points of Historical Interest, and the Archaeological Determinations of Eligibility. The confidential records search results are also provided in Appendix B.

3.2 Previously Conducted Cultural Resource Studies

The SCCIC records indicate that 16 previous cultural resources technical investigations have been conducted within 1 mile of the Project site between 1988 and 2014. Of these, one study overlaps the Project site in its entirety and one study is adjacent to the Project site. All nine technical investigations and are summarized in **Error! Reference source not found.**.

Table 1. Previous Technical Studies Within 1-Mile of the Project Site

Report Number	Author	Year	Report Title	Proximity to Project Site
LA-00072	Rosen, Martin D.	1974	Evaluation of the Resources and Potential Impact of Proposed Extension of Merced Avenue and Olive Street, City of Baldwin Park	Outside
LA-02412	Singer, Clay A.	1968	UCLA Archaeological Survey Field Project Number Ucas-086.	Outside
LA-03803	Wlodarski, Robert J.	1997	A Phase 1 Archaeological Study for Proposed Senior Housing Facilities Located at 3834 Monterey Avenue, Baldwin Park, California	Outside
LA-03824	Anonymous	1995	Cultural Resources Report for the Baldwin Park Operable Unit Water Delivery Plan	Outside
LA-04880	Smith, Philomene and Sriro, Adam	2000	Pavement Rehabilitation Along Route 605 Within the Cities of Long Beach, Lakewood, Cerritos, Downey, Pico Rivera, Santa Fe Springs, Whittier, City of Industry, Baldwin Park and Irwindale.	Adjacent
LA-06281	Storey, Noelle	2001	Highway Project Construction of Wheelchair Ramps at Ramona Blvd., Lower Azusa Road, Live Oak Avenue and Arrow Highway Along Route 605 in the City of Irwindale, Los Angeles County.	Outside
LA-06859	Unknown	1996	Arcadia General Plan	Outside

Table 1. Previous Technical Studies Within 1-Mile of the Project Site

Report Number	Author	Year	Report Title	Proximity to Project Site
LA-08677	Bonner, Wayne H. and Kathleen A. Crawford	2007	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, LLC Candidate La0425c (sce Irwindale), Live Oak Avenue and Graham Road, Irwindale, Los Angeles County, California	Outside
LA-09346	Bonner, Wayne H.	2008	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate IE24106I (U.S. Storage Center), 13201 Ramona Boulevard, Irwindale, Los Angeles County, California	Outside
LA-09705	Anonymous	2007	Cultural Resources Inventory of the Southern California Edison Company Tehachapi Renewable Transmission Project, Kern, Los Angeles and San Bernardino Counties, California. ARR #05-01-01046	Outside
LA-10175	Unknown	2009	Confidential Cultural Resources Specialist Report for the Tehachapi Transmission Project	Outside
LA-11083	Larocque, Mark	2009	Foster # 878090 13402 Ramona Blvd., Baldwin Park, Los Angeles	Outside
LA-11989	Panich, Lee and Holson, John	2010	Supplemental Archaeological Survey Report, 66KV Transmission Lines Access Roads, Tehachapi Renewable Transmission Project Segments 7 and 8, Los Angeles and San Bernardino Counties, California	Outside
LA-11990	Wetherbee, Matthew, Jackson, Thomas, and Tinsley-Becker, Wendy	2010	Supplemental Cultural Resources Survey Report for the Southern California Edison Tehachapi Renewable Transmission Project Segment 7 Rio Hondo-Amamdor-Jose-Mesa 66kv Line Relocation, Los Angeles County, California	Adjacent
LA-11991	Schneider, Tsim and Holson, John	2010	Supplemental Archaeological Survey Report #2, Tehachapi Renewable Transmission Project Segment 7, Los Angeles County, California	Outside
LA-12497	BonTerra Consulting	2010	Draft Program Environmental Impact Report, City of Arcadia 2010 General Plan Update	Outside

LA-04880

Pavement Rehabilitation Along Route 605 Within the Cities of Long Beach, Lakewood, Cerritos, Downey, Pico Rivera, Santa Fe Springs, Whittier, City of Industry, Baldwin Park and Irwindale (Smith and Sriro 2000) reports the results of a records search, background research, and driving survey along the I-605, which runs adjacent to the current Project site on the northwestern border. The records search identified two cultural resources within 0.25 miles of the Project site, though these were not within the records search for the current Project site. The area surveyed was completely paved or landscaped. No further archaeological investigations were recommended.

LA-11990

Supplemental Cultural Resources Survey Report for the Southern California Edison Tehachapi Renewable Transmission Project Segment 7 Rio Hondo-Amamdor-Jose-Mesa 66kv Line Relocation, Los Angeles County, California (Schneider and Holson 2010) reports the results of a records search, a sacred lands file search, and an intensive pedestrian survey for SCE's transmission line which runs along the northwestern border of the current Project site. Within the vicinity of the current Project site, no resources were identified during the records search or the pedestrian survey.

3.3 Previously Recorded Cultural Resources

The SCCIC records indicate that seven cultural resources have been recorded within 1 mile of the Project site; none of which overlap or are located adjacent to the Project site. The resources include a historic refuse deposit, one is a historic road, and five are historic structure. All seven resources are summarized in **Error! Reference source not found.**.

Table 2. Previously Recorded Archaeological Resources Within 1-Mile of the Project Site

Primary Number	Trinomial	Period	NRHP/CRHP Status	Description	Recorded By/Year	Proximity to Project Site
P-19-003117	--	Historic site	Not evaluated.	Refuse deposit	2010 (L. Schrader, W. Bischoff, Pacific Legacy, Inc.)	Outside
P-19-186876	--	Historic structure	6Z: Found Ineligible for NR, CR, or Local Designation through survey evaluation.	SCE Eagle Rock-Pardee & Antelope-Vincent No.1 220kV Transmission Line Corridor	2003 (James J. Schmidt and June A. Schmidt, Compass Rose); 2006 (Koral Ahmet and Sara Bholat, ECORP Consulting); 2010 (Wendy L. Tinsley Becker, Urbana Preservation & Planning); 2010 (Wendy L. Tinsley Becker, Urban Preservation & Planning); 2011 (Wendy L. Tinsley Becker, Urbana Preservation & Planning); 2011 (Patrick Stanton, SRI); 2012 (Wendy L. Tinsley Becker, Urbana Preservation & Planning); 2014 (Daniel Leonard, BCR Consulting)	Outside

Table 2. Previously Recorded Archaeological Resources Within 1-Mile of the Project Site

Primary Number	Trinomial	Period	NRHP/CRHP Status	Description	Recorded By/Year	Proximity to Project Site
P-19-187085	--	Historic Road	Not evaluated.	The Mojave Rd	1989 (S. Elder)	Outside
P-19-188983	--	Historic structure	2B: Determined eligible for NR as an individual property and as a contributor to an eligible district in a federal regulatory process. Listed in the CR.	L A Dept. of Water & Power Boulder Lines North & South	1999 (Stephen Van Wormer, KEA); 2008 (Noah M. Stewart, Caltrans District 7)	Outside
P-19-190504	--	Historic structure	6Z: Found Ineligible for NR, CR, or Local Designation through survey evaluation.	SCE Rio Hondo-Amador-Jose-Mesa-Narrows 66kV Transmission Line	2010 (Wendy L. Tinsley Becker, Urbana Preservation & Planning)	Outside
P-19-190506	--	Historic structure	6Z: Found Ineligible for NR, CR, or Local Designation through survey evaluation.	SCE Rio Hondo-Bradbury 66kV Transmission Line	2010 (Wendy L. Tinsley Becker, Urbana Preservation & Planning)	Outside
P-19-190510	--	Historic structure	7N: Needs to be reevaluated	San Gabriel River Levee - Arcadia-El Monte-Irwindale Span	2010 (Wendy L. Tinsley Becker, Urbana Preservation & Planning)	Outside

3.4 Building Development Research

Extensive archival research was conducted in support of the historical significance evaluation of the six subject properties. Short descriptions of all research efforts are provided below.

Phase I Environmental Site Assessment (ESA) Report

Leymaster Environmental Consulting LLC authored a Phase I ESA in July 2018 for the subject property and Project. The report details the original project description, legal descriptions of the subject property, a title search, owner information, and historical research on the subject property including Sanborn Fire Insurance Maps, City of Irwindale documentation, deeds, aerial photographs, and historical maps.

Los Angeles County Property Assessment Information System (PAIS) System

Dudek used the Property Assessment Information System (PAIS) online assessor records to determine ages for buildings within the proposed Project site and related buildings on March 4, 2019. Information obtained from PAIS was used to establish a building chronology used in preparation of the historic context (Section 2).

City of Irwindale Building & Safety Division

Dudek staff visited the City of Irwindale Building & Safety Division on March 28, 2019, to obtain previous permits issued for the subject property. Permits establish an alteration chronology that was used in the preparation of this document's historical context (Section 2), field survey (Section 4), and significance evaluations (Section 5). A full description of permits is listed in Section 2.4 overview of the subject property in the "Alterations" section.

City of Irwindale Public Library

Dudek staff visited the City of Irwindale Public Library on March 28, 2019. A number of local history resources, including unpublished manuscripts, and local history briefs collected by Patricia Sullivan, previous City Librarian, were used in the preparation of this document's historical context (Section 2).

Sanborn Map Review

No Sanborn Maps were available for Irwindale among the Los Angeles County Sanborn Fire Insurance Company maps available.

Aerial Photograph Review

Historic aerial photographs were available from Nationwide Environmental Title Research (NETR) for the years 1948, 1952, 1964, 1972, 1979, 1980, 1994, 2003, 2004, 2005, 2009, 2010, 2012, and 2014. Additional photographs were available from the Aerial Photograph Collection at the University of California Santa Barbara Map and Imagery Laboratory for the years 1927, 1932, 1938, 1944, 1949, 1956, 1960, 1962, 1968, 1969, 1975, 1981, 1982, and 1986. Recent imagery was available for the years 2014 through 2019 using the "Historical Imagery" tool in Google Earth (AMI 1969, 1975, 1981, 1982, 1986; FAS 1927, 1932, 1938, 1944, 1949, 1956, 1960; Google Earth 2019; NETR 2019; PAI 1962; Teledyne Geotronics 1968).

In the first available photograph from 1927, the subject property appears as undeveloped lands, just east of the San Gabriel River floodplain. The Durbin Pit dominates the region south of Los Angeles Street. East of the subject property is sparse residential lots, interspersed with small orchards, while west of the San Gabriel River floodplain the entire west bank is dominated by an industrial scale orchard. There are no changes to the subject property, except for floodplain scouring damage evident in the 1938 photograph, until 1949 when the two properties east and west of the subject properties become developed. At both parcels, a barn or warehouse and some agricultural fields appear north of the Durbin Pit, but the area in between, the subject property parcel, remains undeveloped. The area east of the subject property has densified, and many of the small-scale orchards have disappeared. Notably, a large residential subdivision of single-family homes appears south of Los Angeles Street along Hornbrook, Harlan and Filhurst Avenues. Residential blocks are also firmly established on the west side of the San Gabriel floodplain by 1949. Rivergrade Road appears by the 1956 photograph, and the San Gabriel River channel south of the Santa Fe Dam appears by the 1960 photograph (FAS 1927, 1932, 1938, 1944, 1949, 1956, 1960; NETR 2019; PAI 1962).

Finally, in the 1968 aerial, the subject property appears with some development. The Office, Weld Shop, west Concrete Casting Bed, and Batch Plant, as well as the parking lot west of the Office building are all present. The Office building is notably lacking its rear addition and features instead a rectangular plan. The Vehicle Bay adjacent to the Weld Shop has not yet been added. Nearly all of the sheds and none of the trailers are present yet. The rear (north) portion of the lot is unfinished, transitioning to patchy pavement or gravel before appearing as naturalized floodplain landscape. The two neighboring agricultural properties are still present, but a large warehouse, parking lot, and outdoor storage (likely metal scrap) have taken up a portion of the east parcel. By the 1969 photograph, the subject property appears to be in operation, as much of the empty space in the rear of the lot is now occupied by piled materials (AMI 1969; Teledyne Geotronics 1968).

There are several changes to the property after 1969. Between 1969 and 1975, the east Concrete Casting Bed and the sheds east of the batch plant appear. West of the subject property, Interstate 605 (I-605) appears fully completed through the region. Between 1975 and 1980, the Vehicle Bay is constructed east of the Weld Shop, a rear addition is added to the Office, connected by a hallway so it forms an "H"-plan, and two trailers appear around the Office Building. Between 1986 and 1994, the Office's H-plan is filled in so that it appears as a square plan instead, a third trailer appears north of the Office, and the Weld Shop gains a small addition on the south elevation. Between 2011 and 2013, the east Concrete Casting Bed breaks into two distinct casting beds, one northeast of the Batch Plant and one southeast of the Batch Plant. There are few changes to the property until 2017. According to Google Earth imagery between October 2016 and March 2017, the subject property appears to be closing. The Concrete Casting Beds appear stripped of materials, cranes, and tracks, storage piles throughout the site are reduced to just a fraction of the original capacity, and most vehicles, including cement mixers and trailers appear to have been removed from the parking and storage spaces. By December 2017, the subject property appears fully abandoned – no material storage piles or vehicles are left on site, mechanical equipment has been completely removed from the casting beds, and no cars in the parking lot (AMI 1969, 1975, 1981, 1982, 1986; Google Earth 2019; NETR 2019).

4 FIELD SURVEY

Dudek Architectural Historian Kate G. Kaiser, MSHP conducted a survey 13131 Los Angeles Street, Irwindale site on March 28, 2019. During the survey, Dudek staff surveyed the exterior of two buildings, equipment, and three trailers and documented them with detailed notes and photographs, specifically noting character-defining features, important spatial relationships, and any observable alterations to the building. Dudek staff documented the fieldwork using field notes and digital photography, as well as using close-scale field maps and aerial photographs. Photographs of the proposed Project site were taken with a 16-megapixel Canon PowerShot ELPH180 camera. All field notes, photographs, and records related to this survey are on file at Dudek's Pasadena, California, office.

4.1 Description of Surveyed Resources

The subject property is located on a 24.5-acre parcel and (AIN 8535-020-007) consists of two buildings (the Office and the Weld Shop), vehicle bay three modern trailers, gravel bins, a batch plant, concrete basting beds, and several plywood sheds. These features are labeled in Figure 2. All buildings discussed below were constructed more than 45 years ago. California DPR Series 523 Forms were prepared for all resources and are provided in Appendix C, per Office of Historic Preservation (OHP) standards (OHP 1995).

Office

The Office is a one-story, Mid-Century Modern commercial office building, constructed in 1967–1968 (Permit LA County 1629). The original function of the building was as an office and laboratory, and includes two rear additions. The building's character-defining features are its fixed aluminum frame windows with colored, metal spandrel panels; geometric metal applique on the main elevation windows; low, horizontal proportions; mass-produced materials, including the Spancrete tilt-up roof panels, CMU cladding, metal, and glass features; flat roof with wide, flat, boxy overhang; cantilevered entry covering on the main elevation, and aluminum lettering and numbering details. The Office is located on the Los Angeles Street property line, between two parking lots, with a small lawn between the main elevation and the public right-of-way. It is southwest of the Weld Shop, and south of the Batch Plant and extant concrete casting beds.

The building features a slightly irregular square plan, with a flat roof with wide flat, boxy overhang and set back parapet. The primary cladding is wide, flat concrete masonry units (CMU) with a roughened outer edge, which switches to taller and wider CMUs for the rear addition. The main elevation is the south elevation and the main entrance is a series of precast concrete steps leading to a sheltered entrance under a cantilevered flat porch roof with the name anodized aluminum lettering spelling "SPANCRETE" attached to the edge. This main entry consists of two glass double doors with flanked by four sidelite glass panels in metal frames on each side, and metal spandrel panels transoms with the address in anodized aluminum numbers in the center panel. The sidelite glass panels have gold-colored geometric designs inscribed on the glass. Secondary

entrances are on the west and north elevations and consist of steel-framed glass doors. Fenestration on all elevation consist of single, fixed aluminum frame windows with colored, metal spandrel panels above and below the windows. The building is connected to a metal trailer on its east elevation, and connected to two other trailers via a raised wooden porch on the north and east elevations (Figures 7 and 8).

Figure 7. Main and west elevation of the Office, looking northeast (IMG 2216)

Figure 8. North elevation of the Office, showing different addition cladding materials, looking southwest (IMG_2182)

Weld Shop

The Weld Shop is a two-story, Mid-Century Modern style industrial building with an office on the second level and a mechanics garage, weld shop, and storage space at the first floor, constructed in 1967–1968 (Permit LA County 1628-67). The building's character-defining features are its fixed aluminum frame windows with colored, metal spandrel panels; precast concrete tilt-up construction; boxy proportions; and flat roof with wide, flat, boxy overhang. It contains several of the same design elements as the Office, but more subdued. The building is immediately adjacent to a covered vehicle bay, which is two stories tall and three bays wide, constructed entirely of tilt-up precast concrete. The Weld Shop is set back from the Los Angeles Street property line, behind a parking lot, northeast of the Office, and south of the Batch Plant and extant concrete casting beds.

The building has irregular plan, and a flat, overhanging roof constructed of precast concrete panels, likely Spancrete manufactured on site or at the Arizona plant. The primary wall material is also tilt-up precast concrete panels, which appeared to be structural and not cladding. There is a one-story, flat roofed addition on the south side of the building clad in CMU, which is the only change from the concrete tilt-up panels. The main elevation is the north side, where there are several entry points. In the left one-and-a-half-story section, the entry is recessed under a tall vehicle bay supported by two concrete posts, and consists of a roll-up aluminum garage door that extends to the roofline. Several bulletin boards and signs are mounted in the vehicle bay. In the middle, two-story section, the first level entrance roll-up aluminum garage door, and entry to the second level is via a metal exterior staircase leaving to a metal door with boarded over upper panel. Three upright precast concrete panels pare decoratively placed in front of the stairwell. There is no main elevation entry point on the one-story, right-most section. There are two secondary entrances on the west elevation of the one story section, which consist of double metal doors, and a single wood door. Fenestration was only present in the two-story section at the second story level and only on the north and south elevations. On the north elevation, this consisted of a group of three windows over metal spandrel panels. The middle window appears to be an awning window, which the outer two appeared fixed. On the south elevation this was one three windows, with the middle window opening consisting of colored spandrel paneling. East of the Weld Shop is the two-story tilt-up concrete vehicle bay, which is up against, but not structurally connected to the Weld Shop (Figures 9 and 10).

Figure 9. North and west elevation of Weld Shop, vehicle bay at left, looking southeast (IMG 2100)

Figure 10. South elevation of Weld Shop, with addition in foreground, looking north(IMG 2175)

Vehicle Bay

East of the Weld Shop is a two-story tilt-up concrete Vehicle Bay, that was constructed between 1975 and 1980. It may be part of the "Weld Shop Roof" permit filed in 1978, however this was not specified in the permit on file with City of Irwindale (LA County 0399B-78). The Vehicle Bay is freestanding and not structurally connected to the Weld Shop. The Vehicle Bay is a utilitarian structure lacking a discernible architectural style, and constructed entirely from tilt-up concrete panels in the roof and concrete pylon supports. It features a flat roof and three bays separated by concrete pylons. The structure features no cladding or fenestration. The fencing near the site indicates that the north elevation was probably the main elevation (Figure 11).

Figure 11. East elevation of Vehicle Bay, showing roof panel detail, looking west (IMG 2158)

Batch Plant

The batch plant is a multi-level metal structure, constructed in 1967 (Permit LA County 1658-67). The batch plant consists of an aggregate conveyor, weight batcher, elevating conveyor, aggregate weighing hopper, water tank, diesel engine, mixer, control cabin, and mix storage silo. The major structural component throughout the batch plant is steel and cladding on the silo and mixer are standing seam steel. The control cabin appears to be prefabricated, and features metal cladding with a horizontal seam, rolled asphalt rood, a metal door with a screened single lite and 2-lite sliding aluminum frame windows. According to the permits, the batch plant covers a 1000 sq. ft. area. The Batch Plant operates by adding different aggregate together in the mixer by weight to achieve the type of concrete desired, then conveying batched material to a mixer where they are mixed uniformly. Mixed material, either wet or dry, is then placed into the storage silo until ready for transport. No water tank or piping was noted at the Batch Plant, but Spancrete slabs were manufactured on site, so this component is likely just missing. Aggregate is procured from the Aggregate Bins that are immediately adjacent to and north of the aggregate conveyor (Figure 12).

Figure 12. View to the batch plant, looking northwest (IMG_2140)

Aggregate Bins

The Aggregate Bins are a concrete structure, constructed in 1967 (Permit LA County 1657-67). The structure consists of precast concrete panels laid horizontally to form five open-ended bays. The foundation is poured concrete. The north, east, and south sides of each bay are enclosed, while the west end is the open end. The north-most bay is the widest, measuring roughly 35 feet wide and 20 feet deep. The remaining four bays are each roughly 18 feet wide by 20 feet deep (Figure 13).

Figure 13. View to the aggregate bins, looking southeast (IMG_2133)

Concrete Casting Beds

There are three extant concrete casting beds remaining on the site, constructed in 1967 (Permit LA Co. 1585-67). Though they are mostly dismantled, the casting beds still contain the poured-in-place concrete beds, metal tracks, and metal, triangular braces for setting forms. The bed west of the Batch Plant is the longest, measuring roughly 800 feet long by 32 feet wide. This bed had a poured-in-place casting bed, divided into six 5-foot sections, intact tracks metal tracks on the outer east and west edges, and triangular braces at the north and south ends of the casting bed. (Figure 14).

Figure 14. View to the west casting bed, looking north (IMG_2101)

The east Casting Bed was a single casting bed until sometime between 2011 and 2013, when a road bisected them creating two beds. The casting bed northeast of the Batch Plant consists only of the poured-in place concrete bed, undivided and the triangular metal braces. This bed measures roughly 400 feet long by 32 feet wide. One set of triangular braces were located at the north end of the bed. The casting bed southeast of the Batch Plant consists of the poured-in place concrete bed, divided into six 5-foot sections, a short section of track, and one set of triangular metal braces. This bed measures roughly 380 feet long by 32 feet wide. One set of triangular braces were located at the south end of the bed (Figure 15).

Figure 15. View to the east casting bed, looking north (IMG_2104)

Trailers

There are three prefabricated metal trailers on the site, located near the Office. Two of the three trailers were added to the site in the 1970s and the last in between 1986 and 1994 according to aerial photographs. No permits were associated with the trailers, and no exact age could be assigned. The double wide green trailer, immediately east of and connected to the Office, and the single wide "Sprouts" trailer northwest of the Office building appear in aerial photographs between 1975 and 1979 (NETR 2019). The remaining trailer, immediately north of the Office Building does not appear in aerial photographs until 1994, dating it to sometime between 1986 and 1995. All three trailers are prefabricated metal trailers, with aluminum windows and metal doors. They are all in various states of decay, defaced with spray paint, and have multiple missing or broken windows, broken doors, or missing pieces of cladding (Figures 16, 17, 18).

Figure 16. Overview of the north and east elevation of the green trailer, looking south. (IMG_2162)

Figure 17. North and east elevations for "Sprouts" trailer, looking southwest. (IMG_2187)

Figure 18. Overview of the east elevation of the white trailer, looking west. (IMG_2183)

Sheds

There are multiple shed structures located throughout the subject property parcel. All of the sheds are in advanced states of decay, constructed of temporary materials such as plywood, aluminum siding, and corrugated galvanized steel, and lack permanent foundations. No permits on file with the City of Irwindale are associated with the sheds, and thus, no exact date may be given for their construction (Figures 19, 20).

Figure 19. Two sheds east of the Batch Plant, looking southwest (IMG_2113)

Figure 20. Three sheds east of the Vehicle Bay, looking south (IMG_2155)

5 SIGNIFICANCE EVALUATION

5.1 NRHP/CRHR Statement of Significance

In consideration of the proposed Project site's history and requisite integrity, the Project site at 13131 Los Angeles Street, Irwindale is recommended not eligible for listing in the NRHP, CRHR, or as a City of Irwindale Historic Resource based on the following significance evaluation.

Criterion A/1: Associated with Events that Have Made a Significant Contribution to the Broad Patterns of Our History.

Archival research did not identify direct associations between the current subject property and events that have made a significant contribution to the broad patterns of local or regional history. Though the Project site happens to be a hollow core concrete manufacturer and is related to the greater theme of concrete manufacturing in Irwindale, the Project site is not the first precast concrete manufacturer in Irwindale. Multiple concrete aggregate mines and manufacturers were instrumental in influencing the incorporation of Irwindale in 1957; however, the subject property, established in 1967, does not have a direct association with that event, since it post-dates the period of significance. Due to a lack of significant associations with events important to history, the Project site at 13131 Los Angeles Street, Irwindale does not appear eligible under NRHP/CRHR Criteria A/1.

Criterion B/2: Associated with the Lives of Persons Significant in Our Past.

To be found eligible under B/2 the property has to be directly tied to an important person and the place where that individual conducted or produced the work for which he or she is known. Henry Nagy and Arthur Hintz were the founders of the original Spancrete manufacturer, West Allis Concrete Products; however, the subject property, Spancrete of California, and its predecessor Arizona Sand & Rock Company were franchisees who purchased the rights to manufacture Spancrete in California. There was no relationship between Nagy or Hintz and the subject property. As such, there are no known associations with any important figures in national, state, or local history. For these reasons, the Project site at 13131 Los Angeles Street, Irwindale does not appear eligible under NRHP/CRHR Criteria B/2.

Criterion C/3: Embody the Distinctive Characteristics of a Type, Period, or Method of Construction, or that Represent the Work of a Master, or that Possess High Artistic Values, or that Represent a Significant and Distinguishable Entity Whose Components May Lack Individual Distinction.

The subject property contains two buildings which man be categorized as Mid-Century Modern and several utilitarian structures which do not have a distinguishable architectural style. The Office building is a Mid-Century Modern style one-story commercial/industrial office. It has several features indicative of this

architectural style; however, the Office has experienced the most visible and recorded alterations of any building on site. Alterations include the addition of a comparably sized rear addition with different cladding materials and the addition of several trailers and connecting hallways. The Weld Shop is a more restrained Mid-Century Modern style industrial building. It has fewer Mid-Century Modern character-defining features than the office, and was significantly altered in 1978, re-roofed with Spancrete hollow core concrete panels (LA County 0399B-78),. The other structures that comprise the Project site at 13131 Los Angeles Street, Irwindale are utilitarian, and lack character-defining features other than their direct relationship to the work that took place in the designated spaces. These include the Batch Plant, which was constructed of pre-fabricated materials manufactured offsite and assembled by Spancrete of California, the Concrete Casting Beds which were also assembled on site with pre-fabricated materials, as well as several prefabricated trailers and sheds. Key components of these structures are also missing, due to demolition by neglect including: missing windows, missing doors, destroyed electrical equipment, cladding and roof panels stripped off the Batch Plant and trailers, and the removal of the track hoists from the casting beds.

None of the buildings or structures are particularly distinctive or unaltered examples of the Mid-Century Modern style, nor representative of a distinctive method of construction. W. H. Griest and T.E. Anvick are not regarded as a master architect or engineer, nor does archival research indicate that they rise to the level of master in lieu of official recognition. The buildings at the Project site do not possess high artistic value, and archival research did not indicate that they might be part of a significant or distinguishable entity that may lack individual distinction. The Project site is not eligible as a contributor to any existing historic district. For all of these reasons, the Project site at 13131 Los Angeles Street, Irwindale does not appear eligible under NRHP/CRHR Criteria C/3.

Criterion D/4: Have Yielded, or May be Likely to Yield, Information Important in Prehistory or History.

There is no evidence to suggest that the Project site at 13131 Los Angeles Street, Irwindale has the potential to yield information important to national, state, or local history, nor is it associated with a known archaeological resource. Therefore, 13131 Los Angeles Street, Irwindale is recommended not eligible under NRHP/CRHR Criterion D/4.

5.2 City of Irwindale Official Register of Historic Resources Criteria

In consideration of the proposed Project site's history and integrity, the Project site at 13131 Los Angeles Street, Irwindale is recommended not eligible for listing as a City of Irwindale Historic Resource based on the following significance evaluation.

Criterion A: The Building or Structure Proposed for Designation is Particularly Representative of a Distinct Historical Period, Type, Style, Region or Way of Life.

The Project site at 13131 Los Angeles Street is an example of a Mid-Century Modern commercial/industrial office building, weld shop, and associated industrial structures; however, the site as a whole does not rise to the level of being particularly representative of the concrete manufacturers in the late 1960s historical period for Irwindale. It appears to be one of the only Mid-Century Modern-style office buildings for a concrete manufacturer, and visually one of the older examples, as many Irwindale-area concrete plants tend to have prefabricated buildings or trailers as the visible buildings from the public right of way. More study into concrete manufacturer buildings built in the 1960s is warranted; however, due to alterations and lack of integrity, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion A.

Criterion B: The Building or Structure was Connected With Someone Renowned, Important, or a Local Personality.

Per NRHP and CRHR Criterion B, the subject property has no direct association with Henry Nagy or Arthur Hintz, the original founders of the original Spancrete manufacturer, West Allis Concrete Products. Further, archival research indicates that Project site at 13131 Los Angeles Street is not connected with an important local personality. Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion B.

Criterion C: The Building or Structure is Connected with a Business or Use Which Was Once Common But is Now Rare.

Archival research and a survey of existing concrete manufacturers in Irwindale indicates that the Project site at 13131 Los Angeles Street is not connected with a business or use that is now rare. The concrete manufacturing industry is neither rare nor obsolete in the City of Irwindale. Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion C.

Criterion D: The Building or Structure Represents the Work of a Master Builder, Engineer, Designer, and Artist or Architect whose Individual Genius Influenced His/ Her Age.

Per NRHP and CRHR Criterion C, neither W. H Griest Jr. nor T.E. Anvick rise to the level of master architect or master engineer. Therefore, the Project site at 13131 Los Angeles Street is not eligible as a City of Irwindale Historic Resource under Criterion D.

Criterion E: The Building or Structure is the Site of an Important Historic Event or is Associated with Events that Have Made a Meaningful Contribution to the Nation, State or City.

Per NRHP and CRHR Criterion A, though multiple concrete aggregate mines and manufacturers were instrumental in influencing the incorporation of Irwindale in 1957, the subject property, established in 1967,

does not have a direct association with that event. Archival research indicates the 13131 Los Angeles Street, Irwindale site is not the site of an important historic event nor is the company Spancrete of California associated with events that made a meaningful contribution to the nation, state, or to City of Irwindale.

Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion E.

Criterion F: The Building Or Structure Exemplifies A Particular Architectural Style.

Per NRHP and CRHR Criterion C, the subject property exemplifies some character-defining features associated with the Mid-Century Modern style, in a restrained fashion suiting the Project site's function. Though not exemplary of the style compared within the region at large, there do not appear to be other Mid-Century Modern style buildings present among Irwindale's extant concrete or aggregate plants, with the exception of the office for Sprague's Ready Mix, which was visible from the public right-of-way. Instead, mostly modern, prefabricated structures and trailers are what is visible from the public right of way. More study into concrete manufacturer buildings built in the Mid-Century Modern style or particular architectural styles rather than just utility buildings is warranted; however, due to alterations and lack of design and material integrity, the subject property is recommended not eligible as a City of Irwindale Historic Resource under Criterion F.

Criterion G: The Building or Structure Exemplifies the Best Remaining Architectural Type of a Neighborhood.

Per NRHP and CRHR Criterion C, the subject property is an example of an industrial building type, including an Office and laboratory, Weld Shop, fabrication structures typical to precast concrete panel construction (Casting Beds, Aggregate Bins, Batch Plant), and support buildings (Sheds, Trailers, Vehicle Bay), however, it is not a unique building type for this neighborhood of Irwindale. There are several other cement production mines, industrial manufacturing buildings and associated plants, utility warehouses, and office parks in the immediate vicinity including the Southern California Edison (SCE) material supply warehouse (1973), or the United Plastic Mold (UPN) manufacturing and office building (1978). The properties adjacent and along Littlejohn Street are all subdued, mid-1980s Corporate Modern office park components or warehouses. Within this neighborhood context, an industrial hollow-core concrete manufacturing property is not unique and due to its alterations should not be considered the best remaining example of this building type in the neighborhood. For these reasons as well as alterations and lack of design and material integrity, the subject property is recommended not eligible as a City of Irwindale Historic Resource under Criterion G.

Criterion H: The Construction Materials or Engineering Methods Used in the Building or Structure Embody Elements of Outstanding Attention to Architectural or Engineering Design, Detail, Material or Craftsmanship.

Archival research, permit research, and in-person survey did not indicate that unique construction materials or engineering methods embody elements of outstanding attention to architectural design, detail, material, or

craftsmanship were used for the construction of the 13131 Los Angeles Street, Irwindale site. Tilt-up concrete panel construction had already been used throughout the Los Angeles region since at least the 1920s. No buildings on site use unique materials of have outstanding attention to detail in craftsmanship. Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion H.

5.3 Integrity Discussion

Location: The Project site at 13131 Los Angeles Street, Irwindale is sited on the original location of construction and in its original orientation. Therefore, the Project site retains integrity of location.

Design: The Office, Weld Shop, and Concrete Casting Beds at the Project site were subjected to several alterations over time that compromise its integrity of design, including a major additions to the Office, minor addition to the Weld Shop, and bisection of the east Concrete Casting Bed as recently as 2013. However, the Office and Weld Shop have no visible alterations to their primary elevations, south for the Office and north for the Weld Shop. The function of the buildings have not changed and presumably remained in their original functions until the site was abandoned. The character-defining features for the Office and Weld Shop are retained and unaffected by alterations. The Office's windows and spandrel panel configuration is reused on the rear addition creating a cohesive transition between the original building and addition. Therefore, the Project site retains integrity of design.

Setting: The setting of the Project site at 13131 Los Angeles Street, Irwindale has changed significantly over time, as nearly all of the adjacent properties north of Los Angeles Street have been removed for the circa 1980s development of several Corporate Modern-style and Post Modern-style office parks and warehouses. The only aspect of setting that is retained is the Durbin Pit, south of the Project site, which appears relatively unchanged since the Project site was completed. This is supported by aerial photograph of the Project site. Therefore, the Project site does not retain integrity of setting.

Materials: The Project site at 13131 Los Angeles Street, Irwindale appears relatively altered by the addition of modern materials in the rear additions to the Office building and Weld Shop. These additions exhibit a different cladding material, both otherwise match fenestration types throughout their respective buildings. Therefore, the Project site does not retain integrity of materials.

Workmanship: The Project site buildings at 13131 Los Angeles Street, Irwindale was compromised by the exterior alterations to the buildings; however, The original workmanship evident in the windows for all buildings, the original entry for the Office, in the brushed metal work signs, and the tilt-up concrete panels walls of the Weld Shop. Therefore, the Project site retains its integrity of workmanship.

Feeling: The Project site at 13131 Los Angeles Street, Irwindale should convey the feeling of a late-1960s, early-1970s series of Mid-Century Modern industrial buildings, and subsequent alterations do not negatively

affected the buildings' ability to convey this feeling when viewed from the primary elevation. Therefore, the Project site retains integrity of feeling.

Association: No important historical associations with events or people were identified for the Project site at 13131 Los Angeles Street, Irwindale.

In summary, the Project site at 13131 Los Angeles Street, Irwindale appears not eligible under all NRHP, CRHR, and City of Irwindale designation criteria. Further, the Project site only retains integrity of location, design, workmanship, and feeling and does not maintain the requisite integrity to support listing in the NRHP, CRHR, or as a City of Los Angeles HCM.

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6 FINDINGS AND RECOMMENDATIONS

6.1 Summary of Findings

As a result of the background research, field survey, and property significance evaluations, the buildings at 13131 Los Angeles Street, Irwindale (Project site) was evaluated and appear not eligible for the NRHP, CRHR, or as a City of Los Angeles HCM, due to a lack of significant historical associations, architectural merit, and compromised integrity. Therefore, these properties are not considered historical resources for the purposes of CEQA.

No archaeological resources were identified within the Project site as a result of the CHRIS records search. Recommendations to reduce unanticipated impacts to archaeological resources and human remains during construction activities are provided below.

6.2 Management Recommendations

Unanticipated Discovery of Archaeological Resources

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 100 feet of the find shall immediately stop until a qualified archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards, can evaluate the significance of the find and determine whether or not additional study is warranted. Should it be required, temporary flagging may be installed around a resource to avoid any disturbances from construction equipment. Depending upon the significance of the find under CEQA (14 California Code of Regulations Section 15064.5(f); PRC Section 21082), the archaeologist may record the find to appropriate standards (thereby addressing any data potential) and allow work to continue. If the archaeologist observes the discovery to be potentially significant under CEQA, additional treatment may be required.

Unanticipated Discovery of Human Remains

In accordance with California Health and Safety Code Section 7050.5, if potential human remains are found, the lead agency staff and the County Coroner must be immediately notified of the discovery. The coroner would provide a determination within 48 hours of notification. No further excavation or disturbance of the identified material, or any area reasonably suspected to overlie additional remains, can occur until a determination has been made. If the County Coroner determines that the remains are, or are believed to be, Native American, the coroner would notify the NAHC within 24 hours. In accordance with PRC Section 5097.98, the NAHC must immediately notify those persons it believes to be the MLD from the deceased Native American. Within 48 hours of this notification, the MLD would recommend to the lead agency her/his preferred treatment of the remains and associated grave goods.

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APPENDIX A

Preparers' Qualifications

Kate Kaiser, MSHP

Architectural Historian

Kate Kaiser is an architectural historian with 7 years' professional experience as a cultural resource manager specializing in California Environmental Quality Act (CEQA) compliance, National Historic Preservation Act Section 106 compliance, reconnaissance and intensive level surveys, archival research, cultural landscapes, and GIS. Ms. Kaiser meets the Secretary of the Interior's Professional Qualification Standards for both architectural history and archaeology.

In addition, Ms. Kaiser has worked as an archaeological technician for the National Park Service and USDA Forest Service. She has worked with federal, private, and local organizations to manage multidisciplinary transportation projects, park-wide inventories, and federal land management projects.

Education

University of Oregon
MS, Historic Preservation, 2017

Boston University
BA, Archaeology, 2009

Professional Affiliations

Association for Preservation Technology – Southwest

California Preservation Foundation

Vernacular Architecture Forum

Dudek Project Experience (2017-present)

Development

Cultural Resources Technical Report for the City of Irwindale Speculative Concrete Tilt-Up Building Project. Irwindale, Los Angeles County, California. 2019. Kaiser served as architectural historian and author of the cultural resources technical report for the City of Irwindale Speculative Concrete Tilt-Up Building Project. The report included conducting a CHRIS record search, reviewing permits held by the City of Irwindale, archival research, historical context development, developing building and structure descriptions, and historical significance evaluations for two buildings and thirteen structures at a hollow-core concrete panel manufacturer in southeast Irwindale. The project proposed to demolish all buildings and structures in the project site and construct a 528 710 s.f., tilt-up concrete wareshouse on the parcel. Resources were determined to not meet the age threshold for listing in the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), or as a City of Irwindale Historic Resource.

Etiwanda Heights Neighborhood and Conservation Plan. Rancho Cucamonga, San Bernardino County, California. 2018. Kaiser served as architectural historian and co-author of the cultural resources technical report for the Etiwanda Heights Neighborhood and Conservation Plan (EHNCP). Ms. Kaiser's report included conducting a record search, coordinating with the San Bernarino County Department of Public Works, developing the structure descriptions, archival research, historical context development, and historical significance evaluations. The project proposed to annex the project area from San Bernardino County into the City of Rancho Cucamonga, and develop the Neighborhood Priority Area into a residential subdivision, and the Conservation Priority Area into a natural resource conservation area. Resources were determined to not meet the age threshold for listing in the National Register of Historic Places (NRHP) and the California Register of Historical Resources (CRHR).

Historical Resource Assessment for 1230 North Ogden Drive, City of West Hollywood, Los Angeles County, California. 2018. Ms Kaiser served as architectural historian and author of the historic resource assessment for four residential buildings on the 1230 North Ogden Drive parcel in West Hollywood. Ms. Kaiser's report included conducting a record

search, coordinating with the City of West Hollywood for building permits, developing the building description, archival research, historical context development, historical significance evaluations, and California DPR form production for the four buildings. The historical resource assessment report fulfills City requirements during the development permit application process. All four buildings were determined inelgibile for listing in the NRHP or CRHR.

Oakmont/Tamarind Warehouse Project. City of Rialto, San Bernardino County, California. 2018. Ms. Kaiser served as architectural historian and co-author of the Cultural Resources Report for the Oakmont/Tamarind Warehouse Project. Ms. Kaiser contributed reconnaissance level fieldwork and aerial photograph descriptions for the report. The project proposed to construct a 156,500 sq. ft., one story warehouse on six adjoiing parcels on approximately 8 acres.

Stickleback Movie Ranch Historical Resource Evaluation, Los Angeles County, California. 2018. Ms. Kaiser served as architectural historian and author of the cultural resources report in support of a larger mitigated negative declaration document. Contributed on-site fieldwork, building development descriptions, archival research, historical context development, and historical significance evaluations for five extant ranch buildings and several other wildfire-damaged resources. The project proposed to demolish six fire-affected buildings and structures for an ongoing Metropolitan Water District project.

Education

John Adams Middle School Auditorium Replacement Project, City of Santa Monica, Los Angeles County, California 2018. Ms. Kaiser served as architectural historian and co-author of the historical resource evaluation report and contributed resource descriptions and alterations sections. The Santa Monica-Malibu Unified School District retained Dudek write the Final Mitigated Negative Declaration for the John Adams Middle School Auditorium Replacement Project for the Santa Monica-Malibu Unified School District. The project proposed to demolish the existing auditorium and music building and replace them with a new performing arts center.

Healthcare

Kaiser Permanente Los Angeles Specialty Medical Center Project, Los Angeles, Los Angeles County, California. 2019. Ms. Kaiser served as architectural historian and author of the Historical Resource Assessment for the Kaiser Permanente Los ANgeles Specialty Medical Center at 755-765 W. College Street in Los Angeles. Preparation of the report involved extensive archival research, reconnaissance level fieldwork, historic context development, building development descriptions, historical significance evaluations for buildings greater than 45-years in age, and DPR forms for the medical center bvuildings and structures that are proposed for demolition as part of the multi-phase project. As a result of the evaluations, all buildings were found not eligible for designation under all applicable national, state, and local designation criteria and integrity requirements.

Kaiser Permanente Los Angeles Medical Center Project, Los Angeles, Los Angeles County, California. 2018. Ms. Kaiser served as architectural historian and co-author of the Draft EIR Cultural Resources Chapter and the author of the Cultural Resources Report Appendix. Preparation of the report involved extensive archival research, reconnaissance level fieldwork, historic context development, building development descriptions, historical significance evaluations, and DPR forms for six buildings greater than 45-years in age that are proposed for demolition as part of the multi-phase project. As a result of the evaluations, all buildings proposed for demolition were found not eligible for designation under all applicable national, state, and local designation criteria and integrity requirements. Ms. Kaiser's DEIR chapter also analyzed potential indirect impacts on two other National Register listed or eligible sites: the Aline Barnsdall Complex and the Hollywood Presbyterian Medical Center.

Municipal

LADWP Valley Generating Station Project, Los Angeles Department of Water and Power, California. 2019 (ongoing). Ms. Kaiser served as architectural historian and author of the Cultural Resources Technical Report for the Valley Generating Station Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1953 steam generating plant, as well as the four stacks, SPRR rail spur, and underground fuel tanks.

LACSD Gardena Pumping Station Project, Sanitaiton Districts of Los Angeles County, Gardena, California. 2019. Ms. Kaiser served as architectural historian and author of the Cultural Resources Technical Report for the Gardena Pumping Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1929 and 1960 pumping plant above and below-ground structures, and two adjacent parcels containing commercial buildings (1954, 1957) and replace them with a larger capacity pumping plant facility.

Phillips 66 & Kinder Morgan Relocation Project, Berths 150-151, Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS), Port of Los Angeles, California. 2019. Ms. Kaiser served as architectural historian and co-author of the Updated Historical Resources Evaluation Report for the Phillips 66 & Kinder Morgan Relocation Project. Preparation of the report involved reviewing previous evaluations for Union Oil Terminal Berths 150-151 and writing an updated significance evaluation. The project proposed to remove and replace the original wharfs with new concrete loading platform, mooring and breasting dolphins, access ramps, catwalks, and an underwater bulkhead. It also proposed the construction of new topside and piping components connecting the new platform to existing pipes in the backlands.

Gilroy City-wide Historic Resource Inventory, City of Gilroy, Santa Clara County, California. 2018 – ongoing. Ms. Kaiser served as architectural historian and co-author for the City-wide historic context statement prepared for the City of Gilroy. Preparation of the historical context statement involved extensive archival research, coordination with the City of Gilroy and archival repositories, chronological period and theme identification, and developing the historical narrative for the City.

Globemaster Corridor Specific Plan, City of Long Beach, Los Angeles County, California. 2018. Ms. Kaiser served as architectural historian and author of the Draft EIR-EIS Cultural Resources Chapter for the Globemaster Corridor Specific Plan (GCSP) project. The project proposed to implement the GCSP, a planning and regulartory framework for redevelopment of an area adjacent to the Long Beach Airport and the surrounding residential and business community which includes rezoning portions of the GCSP area, and a mobility plan that implements new streets and pedestrian connectors. Since the GCSP does not directly propose changes to the buildings or structures in the Plan area, the cultural resources report takes a programmatic overview and offers potential impacts analysis and mitigation measures for future development.

Historic Context Statement for Reservoirs, City of San Diego Public Utilities Department, California. 2018 – ongoing. Ms. Kaiser served as architectural historian and author of the historic context statement, as well as individual historic resource reports for the Barrett Dam and reservoir, Lower Otay Dam and reservoir, and Hodges Dam and reservoir. Dudek is also preparing detailed impacts assessments for proposed modification to dams, as required by DSOD. The project involves evaluation of at least 10 dams for historical significance in consideration of NRHP, CRHR, and City designation criteria and integrity requirements, and requires extensive archival research and pedestrian survey. Upon completion of the project, the City will have a streamlined document for the management of their historic dam and reservoir infrastructure.

LADWP De Soto Tanks Project, Los Angeles Department of Water and Power, California. 2018. Ms. Kaiser served as architectural historian and author of the Historic Properties Identification Report for the De Soto Tanks EIR. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1941 reservoir and associated buildings, and replace them with two modern underground storage tanks, as well as connections to the LADWP Rinaldi Trunk Line and De Soto Trunk Line.

LADWP Tujunga Spreading Grounds Enhancement, Los Angeles Department of Water and Power, California. 2018. Ms. Kaiser served as architectural historian and author of the cultural resources report CEQA-Plus Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The evaluation found the property ineligible under all NRHP, CRHR, and Los Angeles Historic-Cultural Monuments designation criteria. The project proposed to modify a U.S. Army Corps of Engineer-owned flood control channel to divert more flood water from the Tujunga Flood Control Channel into the Tujunga Spreading Grounds.

LADWP West Los Angeles District Yard Project, Los Angeles Department of Water and Power, California. 2017. Ms. Kaiser served as architectural historian and author of the cultural resources report. Preparation of the report involved extensive archival research, in-field research, historic context development, building development descriptions, historical significance evaluations, and DPR forms for each building of the project. The evaluation found the property ineligible under all National Register of Historic Places, California Register of Historic Resources, and Los Angeles Historic-Cultural Monuments designation criteria. The project proposed to demolish existing buildings and build new buildings and an underground parking structure.

Santa Monica City Yards Master Plan Project, City of Santa Monica, Los Angeles County, California. 2017. Ms. Kaiser served as architectural historian and co-author of the historical resource evaluation report. Preparation of the report involved extensive archival research, in-field research, historic context development, building development descriptions, historical significance evaluations, and DPR forms for each building of the project. The City of Santa Monica retained Dudek to complete a cultural resources study for the proposed City Yards Master Plan project site located at 2500 Michigan Avenue in the City of Santa Monica.

State of California

Judicial Council of California Historical Resource Evaluation Report for the Stanley Mosk Courthouse, City of Los Angeles, Los Angeles County, California. 2019. Ms. Kaiser served as architectural historian and author of the historical resource evaluation report. Preparation of the report involved extensive archival research, interior and exterior survey fieldwork, historic context development, material descriptions, historical significance evaluations, and DPR forms for the Stanley Mosk Courthouse. Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Stanley Mosk Los Angeles County Courthouse building, located at 111 N. Hill Street in the City of Los Angeles, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Stanley Mosk Courthouse was found eligible for designation for the NRHP, CHL, CRHR, and Los Angeles Historic Cultural Monument list under Criterion A/1 and C/3.

Erica Nicolay, MA

Cultural Resource Specialist

Erica Nicolay is an cultural resource specialist with 3 years' experience as an archaeologist, primarily in Southern California. Ms. Nicolay has worked on projects for private developers, municipalities, government agencies, and energy companies. She has experience determining cultural resource sensitity for proposed projects, developing project-specific mitigation measures, communicating with interested parties, and/or conducting fieldwork in order to assess known resources or determine if unknown resources could be present.

Education

California State University, Northridge, MA, Public Archaeology, 2016

University of California, Los Angeles BA, Anthropology, 2012

Relevant Project Experience

Development

Cultural Resource Assessment for the Compton High School Replacement Project, Compton California. (3 Weeks) Co-authored cultural resource assessment report for the proposed Compton High School Replacement Project. The purpose of this assessment was to determine the sensitivity of the project area and to determine the likelihood that archaeological resources would be impacted by the proposed construction. Tasks comprised conducting historical research, including analyzing historical aerials, historical topographic maps, and ethnographic literature; initiating and tracking a Native American outreach program; and conducting a search of the California Historical Resources Information System (CHRIS).

222 West Second Street Tribal Cultural Resource Assessment, Los Angeles, California. (3 weeks) Co-authored a tribal cultural resource assessment for 222 West Second Street. The purpose of this assessment was to determine the likelihood of encountering historic or prehistoric tribal cultural resources during the proposed construction. Tasks included analyzing historical aerials, maps and ethnographic resources, and conducting a CHRIS search.

Resource Management

Archaeological Testing and Data Recovery Project, Malibu, California. (6 weeks) Served as a co-field director for an archaeological testing program and subsequent data recovery project at a prehistoric site in Malibu. The purpose of the project was to assess the state of the site, determine if there were intact features present in the proposed footprint of construction for a new gas line, and efficiently and appropriately document and remove any uncovered features. Tasks included supervising a crew of eight archaeologists, coordinating with construction crews, tracking excavation progress and findings, conducting excavation, and creating to-scale plan-view maps of all features.

Updated Cultural Resource Survey for the Travertine Land Development, La Quinta, California. (3 weeks) Served as survey leader on private and Bureau of Land Management land in La Quinta for the proposed Travertine Land Development Proposal. The purpose of the survey was to revisit sites that had previously been located and determine if they were within or outside of the proposed project's area of potential effects. Tasks include relocating and assessing the state of previously recorded sites, preparing updated site forms, and coauthoring the final survey report.

Samantha Murray, MA

Historic Built Environment Lead / Senior Architectural Historian

Samantha Murray is a senior architectural historian with 13 years' professional experience in in all elements of cultural resources management, including project management, intensive-level field investigations, architectural history studies, and historical significance evaluations in consideration of the California Register of Historical Resources (CRHR), the National Register of Historic Places (NRHP), and local-level evaluation criteria. Ms. Murray has conducted hundreds of historical resource evaluations and developed detailed historic context statements for a multitude of property types and architectural styles, including private residential, commercial, industrial, educational, medical, ranching, mining, airport, and cemetery properties, as well as a variety of engineering structures and objects. She has also provided expertise on numerous projects requiring conformance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*.

Education

California State University, Los Angeles
MA, Anthropology, 2013

California State University, Northridge
BA, Anthropology, 2003

Professional Affiliations

California Preservation Foundation

Society of Architectural Historians

National Trust for Historic Preservation

Registered Professional Archaeologist

Ms. Murray meets the Secretary of the Interior's Professional Qualification Standards for both Architectural History and Archaeology. She is experienced managing multidisciplinary projects in the lines of transportation, transmission and generation, federal land management, land development, state and local government, and the private sector. She has experience preparing environmental compliance documentation in support of projects that fall under the California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA), and Sections 106 and 110 of the National Historic Preservation Act (NHPA). She also prepared numerous Historic Resources Evaluation Reports (HRERs) and Historic Property Survey Reports (HPSRs) for the California Department of Transportation (Caltrans).

Dudek Project Experience (2014-2019)

Development

Birch Specific Plan 32-Unit Condo Project, City of Carson, Los Angeles County, California (2018). Dudek was retained by the City of Carson to prepare a cultural resources report for a project that proposes to demolish approximately 6,200 square feet of existing residential buildings and roughly 5,850 square feet of pavement on the project site, and construct a 32-unit residential condominium community with on-grade parking, landscaping, and other associated improvements. The historical significance evaluation included three residential properties proposed for demolition. All properties were found not eligible under all designation criteria and integrity requirements. Ms. Murray provided QA/QC of the final cultural resources report.

Stickleback Movie Ranch Property Evaluation, Los Angeles County, California (2018). Dudek was retained by the Metropolitan Water District of Southern California to complete a historical resource significance evaluation of the Stickleback Movie Ranch property, located in unincorporated Los Angeles County near Santa Clarita, California.

The study included a CHRIS records search of the Stickleback Movie Ranch property and a 0.25-mile radius; a pedestrian survey of the subject property for cultural resources; building development and archival research; recordation and evaluation of cultural resources identified within and around the Stickleback Movie Ranch portion of the study area; and an assessment of potential impacts to historical resources in conformance with CEQA and all applicable local municipal code and planning documents. The former Stickleback Movie Ranch and all associated buildings and structures were found not eligible under all NRHP, CRHR, and Los Angeles County designation criteria.

Healthcare

Kaiser Permanente Los Angeles Specialty Medical Center Project, Los Angeles, Los Angeles County, California (2019). Dudek prepared a Historical Resource Assessment for the Kaiser Permanente Los Angeles Specialty Medical Center at 755-765 W. College Street in Los Angeles. Preparation of the report involved extensive archival research, reconnaissance level fieldwork, historic context development, building development descriptions, historical significance evaluations for buildings greater than 45-years in age, and DPR forms for the medical center buildings and structures that are proposed for demolition as part of the multi-phase project. As a result of the evaluations, all buildings were found not eligible for designation under all applicable national, state, and local designation criteria and integrity requirements. Ms. Murray provided QA/QC of the report and guidance on approach.

Kaiser Permanente Los Angeles Medical Center Project, Los Angeles, Los Angeles County, California (2018). Dudek prepared a Cultural Resources Report that involved extensive archival research, reconnaissance level fieldwork, historic context development, building development descriptions, historical significance evaluations, and DPR forms for six buildings greater than 45-years in age that are proposed for demolition as part of the multi-phase project. As a result of the evaluations, all buildings proposed for demolition were found not eligible for designation under all applicable national, state, and local designation criteria and integrity requirements.

Municipal

LACSD Gardena Pumping Station Project, Sanitation Districts of Los Angeles County, Gardena, California (2019). Dudek prepared a Cultural Resources Technical Report for the Gardena Pumping Project. Preparation of the report involved site recordation, extensive archival research, historic context development, engineering feature development descriptions, historical significance evaluations, and State of California Department of Parks and Recreation Series 523 forms (DPR forms) for each building of the project. The project proposed to remove the 1929 and 1960 pumping plant above and below-ground structures, and two adjacent parcels containing commercial buildings (1954, 1957) and replace them with a larger capacity pumping plant facility. Ms. Murray provided oversight of all built environment components and provided QA/QC of all documents.

LADWP De Soto Trunk Line Project, City of Los Angeles, Los Angeles County, California (2018). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for the De Soto Trunk Line Project. LADWP is proposing the replacement of portions of four existing water pipelines: De Soto, Roscoe, Canoga Topham, and Ventura Trunk Lines. The portions of the existing trunk lines that are proposed for replacement are aging, deteriorating, and nearing the end of their service life. As such, LADWP is proposing to replace these segments with new pipeline. The regulatory framework is CEQA Plus, as such the project was also subject to compliance with Section 106 of the NHPA. Ms. Murray provided QA/QC of the cultural resources report.

The Santa Monica City Yards Master Plan Project, City of Santa Monica, Los Angeles County, California (2017). The City of Santa Monica retained Dudek to complete a cultural resources study for the proposed City Yards Master Plan project site located at 2500 Michigan Avenue in the City of Santa Monica. The study involved evaluation of the entire City Yards site, including two murals and a set of concrete carvings for historical

significance and integrity. As a result, the City Yards and its associated public art work was found ineligible under all designation criteria. Ms. Murray conducted the intensive level survey, building permit research, co-authored the technical report, and provided QA/QC of the final cultural resources report.

148 North Huntington Street, City of Pomona, Los Angeles County, California (2017). Dudek was retained by the City of Pomona to conduct a cultural resources study for the remediation of the project site located at 148 North Huntington Street. The proposed project involves the excavation, removal, and off-site treatment of approximately 10,000 Cubic Yards (CYs) of contaminated soil due to the former presence of a manufactured gas plant (MGP) at the project site (currently the City of Pomona Water and Wastewater Yards). All buildings over 45 years of age within the project site were evaluated for the CRHR and local landmark eligibility as part of the Pomona Gas Plant site. The site was found not eligible with concurrence from the historic resources commission. Ms. Murray conducted the survey, prepared the evaluation, and authored the cultural resources report.

LADWP West Los Angeles District Yard Project, City of Los Angeles, Los Angeles County, California (2017). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for a project that proposes demolition of five LADWP-owned administrative buildings and warehouses at the West Los Angeles District Headquarters located at 12300 West Nebraska Avenue. Dudek evaluated the yard for historical significance in consideration of NRHP, CRHR, and City of Los Angeles HCM criteria and integrity requirements. Ms. Murray co-authored the significance evaluation and provided QA/QC of the cultural resources report.

LADWP Haynes Generating Station Units 3 through 6 Demolition Project, City of Long Beach, Los Angeles County, California (2017). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for a project that proposes demolition of Units 3-6 at the LADWP Haynes Generating Station. Ms. Murray evaluated the entire steam plant for historical significance in consideration of NRHP, CRHR, and City of Long Beach designation criteria and integrity requirements, and co-authored the cultural resources report.

LADWP Green Verdugo Reservoir Improvement Project, City of Los Angeles, Los Angeles County, California (2017). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for a project that proposes facility updates at the reservoir site in order to ensure safe water quality. Ms. Murray evaluated the reservoir for historical significance in consideration of NRHP, CRHR, and City of Los Angeles HCM designation criteria and integrity requirements, and co-authored the cultural resources report.

LADWP Upper Stone Canyon Reservoir Water Quality Improvement Project, City of Los Angeles, Los Angeles County, California (2016). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for a project that proposes to maintain and improve the quality, reliability, and stability of the Stone Canyon Reservoir Complex (SCRC) service area drinking water supply in order to continue to meet customer demand. Dudek prepared an updated evaluation of the reservoir in consideration of NRHP, CRHR, and City of Los Angeles HCM criteria and integrity requirements. Ms. Murray conducted the built environment survey, archival research, and co-authored the cultural resources report.

LADWP Power Plant 1 Long-Term Maintenance Program Project, City of Los Angeles, Los Angeles County, California (2016). Dudek was retained by Los Angeles Department of Water and Power (LADWP) to complete a cultural resources study for the proposed long-term maintenance of the flood control infrastructure in the vicinity of Power Plant 1. Ms. Murray prepared the cultural resources impacts assessment, co-authored the cultural resources report, and provided QA/QC of the cultural resources technical report.

State of California

Judicial Council of California Historical Resource Evaluation Report for the Stanley Mosk Courthouse, City of Los Angeles, Los Angeles County, California (2019). Dudek was retained by the Judicial Council of California (JCC) to

prepare an evaluation of the Stanley Mosk Courthouse building, located at 111 N. Hill Street in the City of Los Angeles, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). Extensive research indicates that the building meets NRHP Criteria A and C; CRHR Criteria 1 and 3; the "important events" and "architecture" criteria for CHL; the "important to Los Angeles history" and "architecture" criteria for Los Angeles HCM; and Criteria 1, 2, and 3 for Los Angeles HPOZ for listing in any of these registration programs. Therefore, the Stanley Mosk Courthouse appears to be a historic resource for the purposes of California Public Resources Code 5024 and 5024.5. Ms. Murray managed the project and provided QA/QC of the final report.

Judicial Council of California Historical Resource Evaluation Report for the Santa Monica Courthouse, City of Santa Monica, Los Angeles County, California (2017). Dudek was retained by the Judicial Council of California (JCC) to prepare an evaluation of the Santa Monica Courthouse building, located at 1725 Main Street in the City of Santa Monica, California. To comply with Public Resources Code Section 5024(b), the JCC must submit to the State Historic Preservation Officer (SHPO) an inventory of all structures over 50 years of age under the JCC's jurisdiction that are listed in or that may be eligible for inclusion in the National Register of Historic Places (NRHP), or registered or that may be eligible for registration as a California Historical Landmark (CHL). The Santa Monica Courthouse was found not eligible for designation under all applicable criteria. Ms. Murray co-authored the report and provided QA/QC of the final cultural resources report.

Department of General Services Historical Resource Evaluation for the Pomona Armory at 600 South Park Avenue, City of Pomona, Los Angeles County, California (2017). Dudek was retained by the State of California Department of General Services to mitigate potential adverse effects to the Pomona Armory (600 South Park Avenue), a state-owned historical resource proposed to be transferred from State-ownership to a local agency or private owner. Ms. Murray prepared a detailed significance evaluation for the Pomona Park Armory in the consideration NRHP, CRHR, CHL, and City of Pomona designation criteria and integrity requirements, and prepared a single historic landmark application for the property. The Pomona Park Armory was locally designated after unanimous approval by the Historic Resources Commission and City Council. SHPO concurred with the evaluation findings and agreed that adverse effects had been adequately mitigated with no comments.

Presentations

***Historical Resources under CEQA*. Prepared for the Orange County Historic Preservation Planner Working Group. Presented by Samantha Murray, Dudek. December 1, 2016.** Ms. Murray delivered a one-hour PowerPoint presentation to the Orange County Historic Preservation Planner Working Group, which included planners from different municipalities in Orange County, regarding the treatment of historical resources under CEQA. Topics of discussion included identification of historical resources, assessing impacts, avoiding or mitigating impacts, overcoming the challenges associated with impacts to historical resources, and developing effective preservation alternatives.

***Knowing What You're Asking For: Evaluation of Historic Resources*. Prepared for Lorman Education Services. Presented by Samantha Murray and Stephanie Standerfer, Dudek. September 19, 2014.** Ms. Murray and Ms. Standerfer delivered a one-hour PowerPoint presentation to paying workshop attendees from various cities and counties in Southern California. The workshop focused on outlining the basics of historical resources under CEQA, and delved into issues/challenges frequently encountered on preservation projects.

APPENDIX B

CONFIDENTIAL Records Search Results

APPENDIX C

DPR Forms

State of California ♦ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

PRIMARY RECORD

Primary #
HRI #
Trinomial
NRHP Status Code 6Z

Other Listings
Review Code Reviewer Date

Page 1 **of** 21 ***Resource Name or #:** (Assigned by recorder) 13131 Los Angeles Street, Irwindale

P1. Other Identifier: Spancrete of California, Hansen Spancrete Pacific, Heidelberg Cement, Clark Pacific

*P2. **Location:** ☐ **Not for Publication** ■ **Unrestricted**

***a. County** Los Angeles County **and** (P2c, P2e, and P2b or P2d. Attach a Location Map as necessary.)

***b. USGS 7.5' Quad** Baldwin Park **Date** 1984 **T** 1S; **R** 11W ; SW **¼ of** SE **¼ of Sec** 12 ; San Bernardino **B.M.**

c. Address 13131 Los Angeles Street City Irwindale Zip 91706

d. UTM: (Give more than one for large and/or linear resources) Zone 11S, 409033.63 mE/ 3772815.34 mN

e. Other Locational Data: (e.g., parcel #, directions to resource, elevation, decimal degrees, etc., as appropriate)
AIN: 8535-020-007; Elevation: 337 ft amsl; Lat/Long: 34° 5'31.84"N, 117°59'9.92"W
The site is generally located east of the San Gabriel River Freeway (Interstate 605), south of the San Gabriel River Flood Control Channel, southeast of the Santa Fe Dam Recreation Area, west of Little John Street, and North of (See Continuation Sheet)

***P3a. Description:** (Describe resource and its major elements. Include design, materials, condition, alterations, size, setting, and boundaries)
The subject property is located on a 24.5-acre parcel and consists of two buildings (the Office and the Weld Shop), a vehicle bay structure, three modern trailers, five gravel bins, a batch plant, two concrete basting beds, and several plywood sheds. The majority of the site was built in 1967. (See Continuation Sheet)

***P3b. Resource Attributes:** HP6 – 1-3 story Commercial Building; HP8 – Industrial Building

***P4. Resources Present:** ■ Building ■ Structure ☐ Object ☐ Site ☐ District ☐ Element of District ☐ Other

P5a. Photograph or Drawing (Photograph required for buildings, structures, and objects.)

P5b. Description of Photo: (view, date, accession #) IMG 2218; View to office and one trailer, looking northeast, 3/28/19

***P6. Date Constructed/Age and Source:** ■ Historic ☐ Prehistoric ☐ Both 1967; City of Irwindale 2019

***P7. Owner and Address:**
Duke Realty
600 East 96th Street Ste 100
Indianapolis, Indiana 46240

***P8. Recorded by:**
Kate Kaiser, Dudek
38 N Marengo Ave
Pasadena, CA 91101

***P9. Date Recorded:** 5/1/2019

***P10. Survey Type:** Pedestrian

***P11. Report Citation:** Dudek. 2019. "Historic Resources Inventory Report for the 13131 Los Angeles Avenue Warehouse Project, City of Irwindale, Los Angeles County, California." Prepared for Duke Realty. May 2019

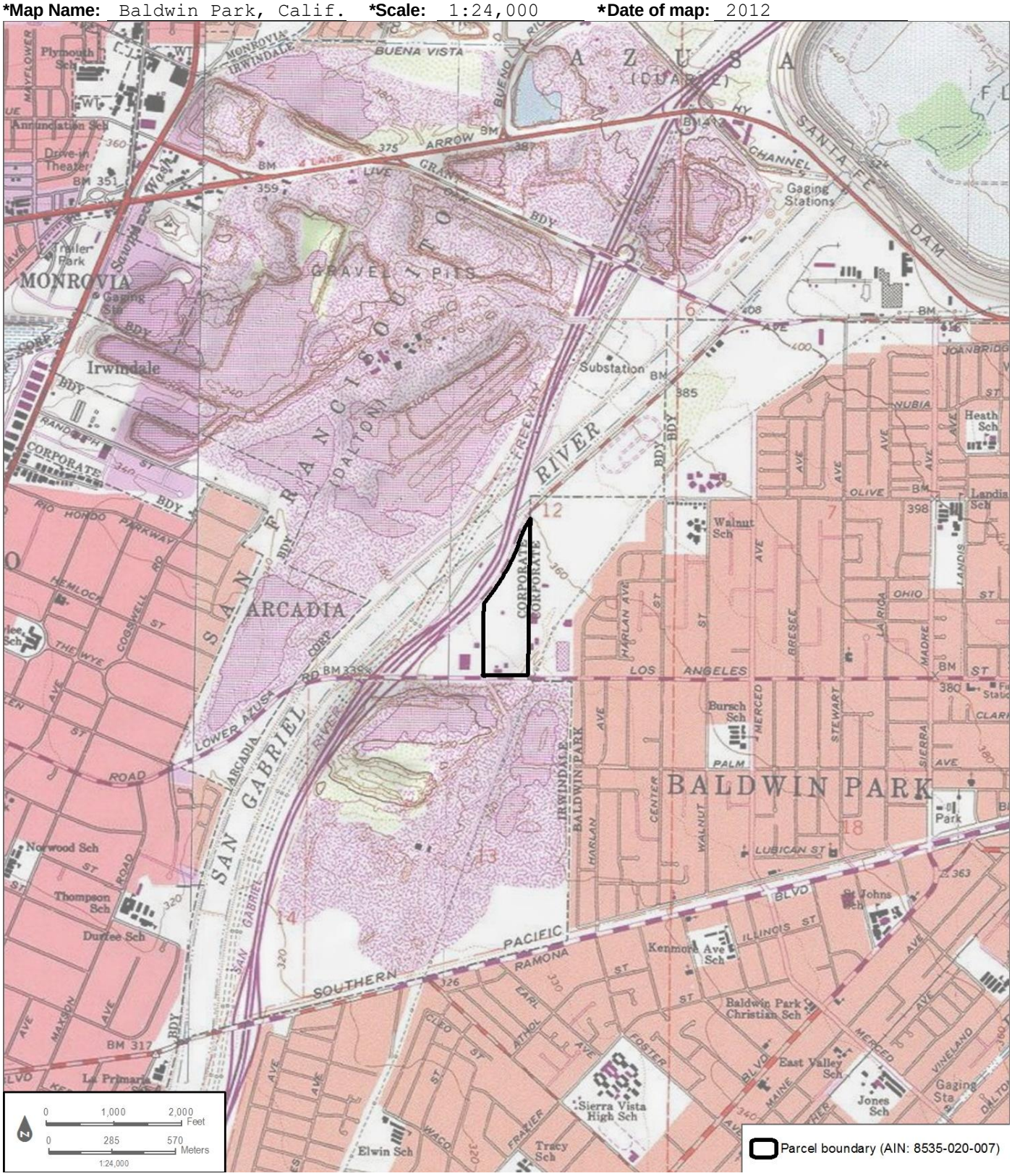
***Attachments:** ☐NONE ■Location Map ■Continuation Sheet ■Building, Structure, and Object Record
☐Archaeological Record ☐District Record ☐Linear Feature Record ☐Milling Station Record ☐Rock Art Record
☐Artifact Record ☐Photograph Record ☐ Other (List):

State of California ☙ Natural Resources Agency
DEPARTMENT OF PARKS AND RECREATION

LOCATION MAP

Primary #
HRI#
Trinomial

Page 2 **of** 21 ***Resource Name or #** (Assigned by recorder) 13131 Los Angeles Street, Irwindale
***Map Name:** Baldwin Park, Calif. ***Scale:** 1:24,000 ***Date of map:** 2012



State of California ♦ The Resources Agency
DEPARTMENT OF PARKS AND RECREATION

Primary #
HRI#

BUILDING, STRUCTURE, AND OBJECT RECORD

***Resource Name or #** (Assigned by recorder) 13131 Los Angeles Street, Irwindale ***NRHP Status Code** 6Z
Page 3 **of** 21

B1. Historic Name: Spancrete of California (1967-1999); Hanson Spancrete Pacific (1999-2010); Heidelberg Cement group (2010-2013); Clark Pacific (2013-2017)
B2. Common Name: 13131 Los Angeles Street
B3. Original Use: hollow core concrete manufacturer and office
B4. Present Use: abandoned
***B5. Architectural Style:** Mid-Century Modern; utilitarian
***B6. Construction History:** (Construction date, alterations, and date of alterations)
Construction History and permits were on file at the Building and Safety Department at City of Irwindale (City of Irwindale 2019).

1967 grading of the site (Permit 1585)
construction of Office building (Permit LA Co. 1629-67)
construction of the Shop (Permit LA Co. 1628-67)
construction of the gravel bins (Permit LA Co. 1657-67)
construction of the Concrete Casting Beds (Permit LA Co. 1585-67)
construction of the Batch Plant (Permit LA Co. 1658-67)

1968 installed two 1000-gallon gasoline tanks and piping (Permit LA County 1901-68)
(See Continuation Sheet)

***B7. Moved?** ■No ☐Yes ☐Unknown **Date:** _____ **Original Location:** _____

***B8. Related Features:**

B9a. Architect: Wilbur Griest, Jr. Engineer: Theodore E. Anvick b. Builder: Spancrete of California

***B10. Significance: Theme** _____ **Area** _____
Period of Significance _____ **Property Type** _____ **Applicable Criteria** _____
(Discuss importance in terms of historical or architectural context as defined by theme, period, and geographic scope. Also address integrity.)
(See Continuation Sheet)

B11. Additional Resource Attributes: (List attributes and codes) _____

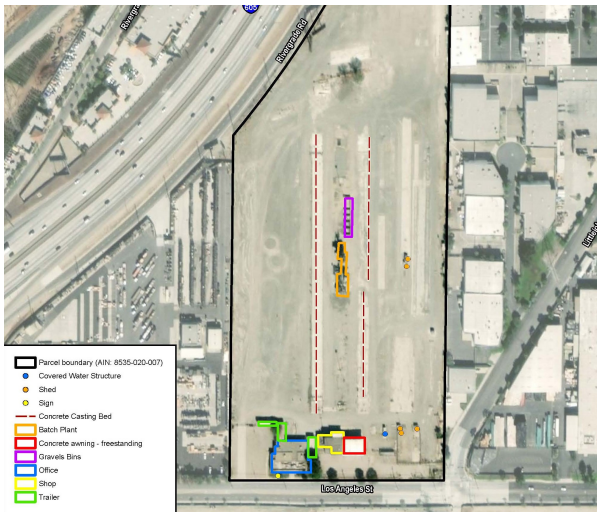
***B12. References:**
(See Continuation Sheet)

B13. Remarks:

***B14. Evaluator:** Kate Kaiser
***Date of Evaluation:** 5/1/2019

(This space reserved for official comments.)

(Sketch Map with north arrow required.)



P2b. Other Location Data (continued): Los Angeles Street. Local street access to the Project site is provided by Los Angeles Street, which borders the site to the south. The site is situated in a partially developed industrial neighborhood, among several gravel pit and retention pond operations: the Vulcan Materials Plant, United Rock Products Corporation, and Peck Road Gravel Pit, and others.

P3a. Description (continued):

Office

The Office is a one-story, Mid-Century Modern commercial office building, constructed in 1967–1968 (Permit LA County 1629). The original function of the building was as an office and laboratory, and includes two rear additions. The building's character-defining features are its fixed aluminum frame windows with colored, metal spandrel panels; geometric metal applique on the main elevation windows; low, horizontal proportions; mass-produced materials, including the Spancrete tilt-up roof panels, CMU cladding, metal, and glass features; flat roof with wide, flat, boxy overhang; cantilevered entry covering on the main elevation, and aluminum lettering and numbering details. The Office is located on the Los Angeles Street property line, between two parking lots, with a small lawn between the main elevation and the public right-of-way. It is southwest of the Weld Shop, and south of the Batch Plant and extant concrete casting beds.

The building features a slightly irregular square plan, with a flat roof with wide flat, boxy overhang and set back parapet. The primary cladding is wide, flat concrete masonry units (CMU) with a roughened outer edge, which switches to taller and wider CMUs for the rear addition. The main elevation is the south elevation and the main entrance is a series of precast concrete steps leading to a sheltered entrance under a cantilevered flat porch roof with the name anodized aluminum lettering spelling "SPANCRETE" attached to the edge. This main entry consists of two glass double doors with flanked by four sidelite glass panels in metal frames on each side, and metal spandrel panels transoms with the address in anodized aluminum numbers in the center panel. The sidelite glass panels have gold-colored geometric designs inscribed on the glass. Secondary entrances are on the west and north elevations and consist of steel-framed glass doors. Fenestration on all elevation consist of single, fixed aluminum frame windows with colored, metal spandrel panels above and below the windows. The building is connected to a metal trailer on its east elevation, and connected to two other trailers via a raised wooden porch on the north and east elevations (Figures 2 and 3).

Figure 2. Main and west elevation of the Office, looking northeast (IMG 2216)

Figure 3. North elevation of the Office, showing different addition cladding materials, looking southwest (IMG_2182)

Weld Shop

The Weld Shop is a two-story, Mid-Century Modern style industrial building with an office on the second level and a mechanics garage, weld shop, and storage space at the first floor, constructed in 1967–1968 (Permit LA County 1628-67). The building's character-defining features are its fixed aluminum frame windows with colored, metal spandrel panels; precast concrete tilt-up construction; boxy proportions; and flat roof with wide, flat, boxy overhang. It contains several of the same design elements as the Office, but more subdued. The building is immediately adjacent to a covered vehicle bay, which is two stories tall and three bays wide, constructed entirely of tilt-up precast concrete. The Weld Shop is set back from the Los Angeles Street property line, behind a parking lot, northeast of the Office, and south of the Batch Plant and extant concrete casting beds.

The building has irregular plan, and a flat, overhanging roof constructed of precast concrete panels, likely Spancrete manufactured on site or at the Arizona plant. The primary wall material is also tilt-up precast concrete panels, which appeared to be structural and not cladding. There is a one-story, flat roofed addition on the south side of the building clad in CMU, which is the only change from the concrete tilt-up panels. The main elevation is the north side, where there are several entry points. In the left one-and-a-half-story section, the entry is recessed under a tall vehicle bay supported by two concrete posts, and consists of a roll-up aluminum garage door that extends to the roofline. Several bulletin boards and signs are mounted in the vehicle bay. In the middle, two-story section, the first level entrance roll-up aluminum garage door, and entry to the second level is via a metal exterior staircase leaving to a metal door with boarded over upper panel. Three upright precast concrete panels pare decoratively placed in front of the stairwell. There is no main elevation entry point on the one-story, right-most section. There are two secondary entrances on the west elevation of the one story section, which consist of double metal doors, and a single wood door. Fenestration was only present in the two-story section at the second story level and only on the north and south elevations. On the north elevation, this consisted of a group of three windows over metal spandrel panels. The middle window appears to be an awning window, which the outer two appeared fixed. On the south elevation this was one three windows, with the middle window opening consisting of colored spandrel paneling. East of the Weld Shop is the two-story tilt-up concrete vehicle bay, which is up against, but not structurally connected to the Weld Shop (Figures 4 and 5).

Figure 4. North and west elevation of Weld Shop, vehicle bay at left, looking southeast (IMG 2100)

Figure 5. South elevation of Weld Shop, with addition in foreground, looking north(IMG 2175)

Vehicle Bay

East of the Weld Shop is a two-story tilt-up concrete Vehicle Bay, that was constructed between 1975 and 1980. It may be part of the "Weld Shop Roof" permit filed in 1978, however this was not specified in the permit on file with City of Irwindale (LA County 0399B-78). The Vehicle Bay is freestanding and not structurally connected to the Weld Shop. The Vehicle Bay is a utilitarian structure lacking a discernible architectural style, and constructed entirely from tilt-up concrete panels in the roof and concrete pylon supports. It features a flat roof and three bays separated by concrete pylons. The structure features no cladding or fenestration. The fencing near the site indicates that the north elevation was probably the main elevation (Figure 6).

Figure 6. East elevation of Vehicle Bay, showing roof panel detail, looking west (IMG 2158)

Batch Plant

The batch plant is a multi-level metal structure, constructed in 1967 (Permit LA County 1658-67). The batch plant consists of an aggregate conveyor, weight batcher, elevating conveyor, aggregate weighing hopper, water tank, diesel engine, mixer, control cabin, and mix storage silo. The major structural component throughout the batch plant is steel and cladding on the silo and mixer are standing seam steel. The control cabin appears to be prefabricated, and features metal cladding with a horizontal seam, rolled asphalt rood, a metal door with a screened single lite and 2-lite sliding aluminum frame windows. According to the permits, the batch plant covers a 1000 sq. ft. area. The Batch Plant operates by adding different aggregate together in the mixer by weight to achieve the type of concrete desired, then conveying batched material to a mixer where they are mixed uniformly. Mixed material, either wet or dry, is then placed into the storage silo until ready for transport. No water tank or piping was noted at the Batch Plant, but Spancrete slabs were manufactured on site, so this component is likely just missing. Aggregate is procured from the Aggregate Bins that are immediately adjacent to and north of the aggregate conveyor (Figure 7).

Figure 7. View to the batch plant, looking northwest (IMG_2140)

Aggregate Bins

The Aggregate Bins are a concrete structure, constructed in 1967 (Permit LA County 1657-67). The structure consists of precast concrete panels laid horizontally to form five open-ended bays. The foundation is poured concrete. The north, east, and south sides of each bay are enclosed, while the west end is the open end. The north-most bay is the widest, measuring roughly 35 feet wide and 20 feet deep. The remaining four bays are each roughly 18 feet wide by 20 feet deep (Figure 8).

Figure 8. View to the aggregate bins, looking southeast (IMG_2133)

Concrete Casting Beds

There are three extant concrete casting beds remaining on the site, constructed in 1967 (Permit LA Co. 1585-67). Though they are mostly dismantled, the casting beds still contain the poured-in-place concrete beds, metal tracks, and metal, triangular braces for setting forms. The bed west of the Batch Plant is the longest, measuring roughly 800 feet long by 32 feet wide. This bed had a poured-in-place casting bed, divided into six 5-foot sections, intact tracks metal tracks on the outer east and west edges, and triangular braces at the north and south ends of the casting bed. (Figure 9).

Figure 9. View to the west casting bed, looking north (IMG_2101)

The east Casting Bed was a single casting bed until sometime between 2011 and 2013, when a road bisected them creating two beds. The casting bed northeast of the Batch Plant consists only of the poured-in place concrete bed, undivided and the triangular metal braces. This bed measures roughly 400 feet long by 32 feet wide. One set of triangular braces were located at the north end of the bed. The casting bed southeast of the Batch Plant consists of the poured-in place concrete bed, divided into six 5-foot sections, a short section of track, and one set of triangular metal braces. This bed measures roughly 380 feet long by 32 feet wide. One set of triangular braces were located at the south end of the bed (Figure 10).

Figure 10. View to the east casting bed, looking north (IMG_2104)

Trailers

There are three prefabricated metal trailers on the site, located near the Office. Two of the three trailers were added to the site in the 1970s and the last in between 1986 and 1994 according to aerial photographs. No permits were associated with the trailers, and no exact age could be assigned. The double wide green trailer, immediately east of and connected to the Office, and the single wide "Sprouts" trailer northwest of the Office building appear in aerial photographs between 1975 and 1979 (NETR 2019). The remaining trailer, immediately north of the Office Building does not appear in aerial photographs until 1994, dating it to sometime between 1986 and 1995. All three trailers are prefabricated metal trailers, with aluminum windows and metal doors. They are all in various states of decay, defaced with spray paint, and have multiple missing or broken windows, broken doors, or missing pieces of cladding (Figures 11, 12, 13).

Figure 11. Overview of the north and east elevation of the green trailer, looking south. (IMG_2162)

Figure 12. North and east elevations for "Sprouts" trailer, looking southwest. (IMG_2187)

Figure 13. Overview of the east elevation of the white trailer, looking west. (IMG_2183)

Sheds

There are multiple shed structures located throughout the subject property parcel. All of the sheds are in advanced states of decay, constructed of temporary materials such as plywood, aluminum siding, and corrugated galvanized steel, and lack permanent foundations. No permits on file with the City of Irwindale are associated with the sheds, and thus, no exact date may be given for their construction (Figures 14, 15).

Figure 14. Two sheds east of the Batch Plant, looking southwest (IMG_2113)

Figure 25. Three sheds east of the Vehicle Bay, looking south (IMG_2155)

B6. Construction History (continued):

1968 Heating and Air Conditioning added to main office (Permit LA County 1770-68)

1971 Addition of 14 sf light fixture, manufactured by Aladdin Signs (Permit 3045-71)

1976 Added a 75000 sf, 1-story, addition immediately north of the original office building. Constructed with tilt-up, precast concrete masonry walls, manufactured by Tomax and Spancrete (Permit 6107-76)

1978 Weld Shop Roof alteration; possible construction of Vehicle Bay structure (Permit LA County 0399B-78)

1979 Added two 40-foot tall light poles and four 30-foot light poles (Permit 0399B-79)

1980 Added 40 foot lighting standards and flood lights throughout site, manufactured by Pacific Regional Lighting (Permit 1089A-86)

1986 Enclosed the plaza area between existing office building, wings, and office addition (Permit 6941A-86)
Added cast aluminum anodized lettering, "Spancrete of California," to the west elevation exterior wall (Permit 7312A-86)
New 4,000-gallon tank and piping (Permit 7386A-86)

2003 Demolished underground gasoline tank (Permit B397470)

2004 Demolished underground gasoline tank (Permit B00-001-767)

2010 Demolished four highway-adjacent billboards (Permit B00-004-728 through 731)

B10. Significance (continued):

In consideration of the proposed Project site's history and requisite integrity, the Project site at 13131 Los Angeles Street, Irwindale is recommended not eligible for listing in the NRHP, CRHR, or as a City of Irwindale Historic Resource based on the following significance evaluation.

Criterion A/1: Associated with Events that Have Made a Significant Contribution to the Broad Patterns of Our History.

Archival research did not identify direct associations between the current subject property and events that have made a significant contribution to the broad patterns of local or regional history. Though the Project site happens to be a hollow core concrete manufacturer and is related to the greater theme of concrete manufacturing in Irwindale, the Project site is not the first precast concrete manufacturer in Irwindale. Multiple concrete aggregate mines and manufacturers were instrumental in influencing the incorporation of Irwindale in 1957; however, the subject property, established in 1967, does not have a direct association with that event, since it post-dates the period of significance. Due to a lack of significant associations with events important to history, the Project site at 13131 Los Angeles Street, Irwindale does not appear eligible under NRHP/CRHR Criteria A/1.

Criterion B/2: Associated with the Lives of Persons Significant in Our Past.

To be found eligible under B/2 the property has to be directly tied to an important person and the place where that individual conducted or produced the work for which he or she is known. Henry Nagy and Arthur Hintz were the founders of the original Spancrete manufacturer, West Allis Concrete Products; however, the subject property, Spancrete of California, and its predecessor Arizona Sand & Rock Company were franchisees who purchased the rights to manufacture Spancrete in California. There was no relationship between Nagy or Hintz and the subject property. As such, there are no known associations with any important figures in national, state, or local history. For these reasons, the Project site at 13131 Los Angeles Street, Irwindale does not appear eligible under NRHP/CRHR Criteria B/2.

Criterion C/3: Embody the Distinctive Characteristics of a Type, Period, or Method of Construction, or that Represent the Work of a Master, or that Possess High Artistic Values, or that Represent a Significant and Distinguishable Entity Whose Components May Lack Individual Distinction.

The subject property contains two buildings which man be categorized as Mid-Century Modern and several utilitarian structures which do not have a distinguishable architectural style. The Office building is a Mid-Century Modern style one-story commercial/industrial office. It has several features indicative of this architectural style; however, the Office has experienced the most visible and recorded alterations of any building on site. Alterations include the addition of a comparably sized rear addition with different cladding materials and the addition of several trailers and connecting hallways. The Weld Shop is a more restrained Mid-Century Modern style industrial building. It has fewer Mid-Century Modern character-defining features than the office, and was significantly altered in 1978, re-roofed with Spancrete hollow core concrete panels (LA County 0399B-78),. The other structures that comprise the Project site at 13131 Los Angeles Street, Irwindale are utilitarian, and lack character-defining features other than their direct relationship to the work that took place in the designated spaces. These include the Batch Plant, which

was constructed of pre-fabricated materials manufactured offsite and assembled by Spancrete of California, the Concrete Casting Beds which were also assembled on site with pre-fabricated materials, as well as several prefabricated trailers and sheds. Key components of these structures are also missing, due to demolition by neglect including: missing windows, missing doors, destroyed electrical equipment, cladding and roof panels stripped off the Batch Plant and trailers, and the removal of the track hoists from the casting beds.

None of the buildings or structures are particularly distinctive or unaltered examples of the Mid-Century Modern style, nor representative of a distinctive method of construction. W. H. Griest and T.E. Anvick are not regarded as a master architect or engineer, nor does archival research indicate that they rise to the level of master in lieu of official recognition. The buildings at the Project site do not possess high artistic value, and archival research did not indicate that they might be part of a significant or distinguishable entity that may lack individual distinction. The Project site is not eligible as a contributor to any existing historic district. For all of these reasons, the Project site at 13131 Los Angeles Street, Irwindale does not appear eligible under NRHP/CRHR Criteria C/3.

Criterion D/4: Have Yielded, or May be Likely to Yield, Information Important in Prehistory or History.

There is no evidence to suggest that the Project site at 13131 Los Angeles Street, Irwindale has the potential to yield information important to national, state, or local history, nor is it associated with a known archaeological resource. Therefore, 13131 Los Angeles Street, Irwindale is recommended not eligible under NRHP/CRHR Criterion D/4.

City of Irwindale Official Register of Historic Resources Criteria

In consideration of the proposed Project site's history and integrity, the Project site at 13131 Los Angeles Street, Irwindale is recommended not eligible for listing as a City of Irwindale Historic Resource based on the following significance evaluation.

Criterion A: The Building or Structure Proposed for Designation is Particularly Representative of a Distinct Historical Period, Type, Style, Region or Way of Life.

The Project site at 13131 Los Angeles Street is an example of a Mid-Century Modern commercial/industrial office building, weld shop, and associated industrial structures; however, the site as a whole does not rise to the level of being particularly representative of the concrete manufacturers in the late 1960s historical period for Irwindale. It appears to be one of the only Mid-Century Modern-style office buildings for a concrete manufacturer, and visually one of the older examples, as many Irwindale-area concrete plants tend to have prefabricated buildings or trailers as the visible buildings from the public right of way. More study into concrete manufacturer buildings built in the 1960s is warranted; however, due to alterations and lack of integrity, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion A.

Criterion B: The Building or Structure was Connected With Someone Renowned, Important, or a Local Personality.

Per NRHP and CRHR Criterion B, the subject property has no direct association with Henry Nagy or Arthur Hintz, the original founders of the original Spancrete manufacturer, West Allis Concrete Products. Further, archival research indicates that Project site at 13131 Los Angeles Street is not connected with an important local personality. Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion

B.

Criterion C: The Building or Structure is Connected with a Business or Use Which Was Once Common But is Now Rare.

Archival research and a survey of existing concrete manufacturers in Irwindale indicates that the Project site at 13131 Los Angeles Street is not connected with a business or use that is now rare. The concrete manufacturing industry is neither rare nor obsolete in the City of Irwindale. Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion C.

Criterion D: The Building or Structure Represents the Work of a Master Builder, Engineer, Designer, and Artist or Architect whose Individual Genius Influenced His/ Her Age.

Per NRHP and CRHR Criterion C, neither W. H Griest Jr. nor T.E. Anvick rise to the level of master architect or master engineer. Therefore, the Project site at 13131 Los Angeles Street is not eligible as a City of Irwindale Historic Resource under Criterion D.

Criterion E: The Building or Structure is the Site of an Important Historic Event or is Associated with Events that Have Made a Meaningful Contribution to the Nation, State or City.

Per NRHP and CRHR Criterion A, though multiple concrete aggregate mines and manufacturers were instrumental in influencing the incorporation of Irwindale in 1957, the subject property, established in 1967, does not have a direct association with that event. Archival research indicates the 13131 Los Angeles Street, Irwindale site is not the site of an important historic event nor is the company Spancrete of California associated with events that made a meaningful contribution to the nation, state, or to City of Irwindale. Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion E.

Criterion F: The Building Or Structure Exemplifies A Particular Architectural Style.

Per NRHP and CRHR Criterion C, the subject property exemplifies some character-defining features associated with the Mid-Century Modern style, in a restrained fashion suiting the Project site's function. Though not exemplary of the style compared within the region at large, there do not appear to be other Mid-Century Modern style buildings present among Irwindale's extant concrete or aggregate plants, with the exception of the office for Sprague's Ready Mix, which was visible from the public right-of-way. Instead, mostly modern, prefabricated structures and trailers are what is visible from the public right of way. More study into concrete manufacturer buildings built in the Mid-Century Modern style or particular architectural styles rather than just utility buildings is warranted; however, due to alterations and lack of design and material integrity, the subject property is recommended not eligible as a City of Irwindale Historic Resource under Criterion F.

Criterion G: The Building or Structure Exemplifies the Best Remaining Architectural Type of a Neighborhood.

Per NRHP and CRHR Criterion C, the subject property is an example of an industrial building type, including an Office and laboratory, Weld Shop, fabrication structures typical to precast concrete panel construction (Casting Beds, Aggregate Bins, Batch Plant), and support buildings (Sheds, Trailers, Vehicle Bay), however, it is not a unique building type for this neighborhood of Irwindale. There are several other cement production mines, industrial manufacturing buildings and associated plants, utility warehouses, and office parks in the immediate vicinity including the Southern California Edison (SCE) material

supply warehouse (1973), or the United Plastic Mold (UPN) manufacturing and office building (1978). The properties adjacent and along Littlejohn Street are all subdued, mid-1980s Corporate Modern office park components or warehouses. Within this neighborhood context, an industrial hollow-core concrete manufacturing property is not unique and due to its alterations should not be considered the best remaining example of this building type in the neighborhood. For these reasons as well as alterations and lack of design and material integrity, the subject property is recommended not eligible as a City of Irwindale Historic Resource under Criterion G.

Criterion H: The Construction Materials or Engineering Methods Used in the Building or Structure Embody Elements of Outstanding Attention to Architectural or Engineering Design, Detail, Material or Craftsmanship.

Archival research, permit research, and in-person survey did not indicate that unique construction materials or engineering methods embody elements of outstanding attention to architectural design, detail, material, or craftsmanship were used for the construction of the 13131 Los Angeles Street, Irwindale site. Tilt-up concrete panel construction had already been used throughout the Los Angeles region since at least the 1920s. No buildings on site use unique materials of have outstanding attention to detail in craftsmanship. Therefore, the subject property is not eligible as a City of Irwindale Historic Resource under Criterion H.

Integrity Discussion

Location: The Project site at 13131 Los Angeles Street, Irwindale is sited on the original location of construction and in its original orientation. Therefore, the Project site retains integrity of location.

Design: The Office, Weld Shop, and Concrete Casting Beds at the Project site were subjected to several alterations over time that compromise its integrity of design, including a major additions to the Office, minor addition to the Weld Shop, and bisection of the east Concrete Casting Bed as recently as 2013. However, the Office and Weld Shop have no visible alterations to their primary elevations, south for the Office and north for the Weld Shop. The function of the buildings have not changed and presumably remained in their original functions until the site was abandoned. The character-defining features for the Office and Weld Shop are retained and unaffected by alterations. The Office's windows and spandrel panel configuration is reused on the rear addition creating a cohesive transition between the original building and addition. Therefore, the Project site retains integrity of design.

Setting: The setting of the Project site at 13131 Los Angeles Street, Irwindale has changed significantly over time, as nearly all of the adjacent properties north of Los Angeles Street have been removed for the circa 1980s development of several Corporate Modern-style and Post Modern-style office parks and warehouses. The only aspect of setting that is retained is the Durbin Pit, south of the Project site, which appears relatively unchanged since the Project site was completed. This is supported by aerial photograph of the Project site. Therefore, the Project site does not retain integrity of setting.

Materials: The Project site at 13131 Los Angeles Street, Irwindale appears relatively altered by the addition of modern materials in the rear additions to the Office building and Weld Shop. These additions exhibit a different cladding material, both otherwise match fenestration types throughout their respective buildings. Therefore, the Project site does not retain integrity of materials.

Workmanship: The Project site buildings at 13131 Los Angeles Street, Irwindale was

compromised by the exterior alterations to the buildings; however, The original workmanship evident in the windows for all buildings, the original entry for the Office, in the brushed metal work signs, and the tilt-up concrete panels walls of the Weld Shop. Therefore, the Project site retains its integrity of workmanship.

Feeling: The Project site at 13131 Los Angeles Street, Irwindale should convey the feeling of a late-1960s, early-1970s series of Mid-Century Modern industrial buildings, and subsequent alterations do not negatively affected the buildings' ability to convey this feeling when viewed from the primary elevation. Therefore, the Project site retains integrity of feeling.

Association: No important historical associations with events or people were identified for the Project site at 13131 Los Angeles Street, Irwindale.

In summary, the Project site at 13131 Los Angeles Street, Irwindale appears not eligible under all NRHP, CRHR, and City of Irwindale designation criteria. Further, the Project site only retains integrity of location, design, workmanship, and feeling and does not maintain the requisite integrity to support listing in the NRHP, CRHR, or as a City of Los Angeles HCM.

B12. References (continued):

City of Irwindale. 1967. Site inspection reports. On File at the City of Irwindale Building & Safety Department.

City of Irwindale. 2019. Permits for 13131 Los Angeles Street

APPENDIX E

Phase I Environmental Site Assessment

LEYMASTER ENVIRONMENTAL CONSULTING, LLC

July 23, 2018

Mr. Michael Weber
Duke Realty
200 Spectrum Center Drive, Suite 1600
Irvine, CA 92618

Re: PHASE I SITE ASSESSMENT REPORT
13131 Los Angeles Street
Irwindale, California 91706

Dear Mr. Weber:

We are pleased to enclose our Phase I Environmental Site Assessment Report for the above-referenced property.

Leymaster Environmental Consulting appreciates the opportunity to have been of assistance and looks forward to working with you again. Please call if you have any questions regarding this report.

Sincerely,

Mark Leymaster
Environmental Professional

Travis Knight
Staff Engineer

Enclosure

5500 E. Atherton Street, Suite 210
Long Beach, CA 90815
Office (562) 799-9866
www.leymaster.net

PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

13131 Los Angeles Street
Irwindale, California 91706

July 23, 2018

Submitted by:

Leymaster Environmental Consulting, LLC
5500 East Atherton Street, Suite 210
Long Beach, California 90815
(562) 799-9866

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PHASE I ENVIRONMENTAL SITE ASSESSMENT REPORT

13131 Los Angeles Street
Irwindale, California 91706

1. Summary

Leymaster Environmental Consulting, LLC, performed a Phase I Environmental Site Assessment (ESA) in general accordance with the scope of work and limitations set forth by Mr. Michael Weber, on behalf of Duke Realty for the property at 13131 Los Angeles Street in Irwindale, California 91706 ("Property").

The Phase I ESA is designed to provide Duke Realty with an assessment concerning environmental conditions (limited to those issues identified in the report) as they exist at the Property. This assessment was conducted utilizing generally accepted ESA industry standards in accordance with ASTM E 1527-13, Standard Practice for Environmental Assessments: Phase I Environmental Site Assessment Process and EPA Final All Appropriate Inquiries (AAI) standard practices. Any exceptions to or deletions from this practice are described in ***Section 2.4*** of this report.

Development of the Property began in 1967 when the California Portland Cement Company, a manufacturer of cement, ready mix concrete, building and construction supplies, and concrete products began operations. Over the years, there have been several ownership changes; however, the operations have remained the same. Previous occupants include Spancrete of California, United Ready-Mix Concrete, Hanson Spancrete Pacific Inc., the Heidelberg Cement Group and Clark Pacific. The Property has been unoccupied since July 2017.

Two 1,000-gallon underground fuel tanks were installed in 1967 and removed in 1986. The tanks were removed under the oversight of the Los Angeles County Department of Public Works (DPW). Analytical results from soil samples collected during tank removal activities indicated concentrations of total petroleum hydrocarbons (TPH) ranging from 46.5 parts per million (ppm) to 254.2 ppm. Depth to groundwater was reported at 150 to 175 feet below grade. The DPW issued a No Further Action (NFA) Letter in December 1986.

Following tank removal activities, a 4,000-gallon dual compartment fuel tank was installed in the former tank excavation area. This tank and the related dispensers and piping were removed in February 2004 under the oversight of the DPW. Soil samples collected beneath the tank and dispensers were below detection limits for TPH as gasoline, TPH as diesel, volatile organic compounds (VOCS), fuel oxygenates and organic lead. Soil samples were not collected along the piping run because the distance was less than 20 feet. The DPW issued a NFA letter in March 2007. Based on this, the former tanks do not represent an environmental concern.

The Property is listed in the HAZNET, LACHMS, NPDES, WDS, WIP, FINDS ECHO and CIWQS databases searched by Environmental Data Resources, Inc. (EDR). In each case, no substantive information was provided that would indicate a significant environmental threat to the Property.

The Property was also included in the SWEEPS, UST and HIST UST databases searched by EDR. Inclusion in these databases is resulting from the former underground storage tanks discussed above and does not represent an environmental concern.

No environmental concerns exist as a result of the sites listed in the EDR Report and supplemental agency review attachments of this report due to either the distance from the Property, the absence of violations, or responsible parties have been identified for the environmental concern.

This Phase I ESA revealed no evidence of environmental conditions associated with the Property. No further investigation is recommended at this time.

2. **Introduction**

Leymaster Environmental Consulting, LLC (LEC) was retained by Mr. Weber, on behalf of Duke Realty to conduct a Phase I ESA of the property at 13131 Los Angeles Street, in the City of Irwindale, California 91706 (Local Area Map – ***Appendix A***). The protocol used for this assessment is in general conformance with ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessments Process and EPA Final All Appropriate Inquiries (AAI) standard practices.

2.1 Purpose

The purpose of this ESA was to identify existing or potential recognized environmental conditions (as defined by ASTM Standard E 1527-13) in connection with the Property. LEC understands that the findings of this assessment will be used by Duke Realty in connection with a pending financial transaction involving the Property.

2.2 Detailed Scope of Services

The scope of work for this ESA is in general accordance with the requirements of ASTM Standard E 1527-13 and EPA AAI. LEC warrants that the findings and conclusions contained herein were accomplished in accordance with the methodologies set forth in the Scope of Work. These methodologies are described as representing good commercial and customary practice for conducting an Environmental Site Assessment of a property for the purpose of identifying environmental conditions.

No other warranties are implied or expressed.

2.3 Significant Assumptions

There is a possibility that even with the proper application of these methodologies there may exist on the Property conditions that could not be identified within the scope of the assessment or that were not reasonably identifiable from the available information. LEC believes that the information obtained from the record review and the interviews concerning the Property is reliable. However, LEC cannot and does not warrant or guarantee that the information provided by these other sources is accurate or complete. The methodologies of this assessment are not intended to produce all inclusive or comprehensive results, but rather to provide Duke Realty with information relating to the Property.

2.4 Limitations and Exceptions of Assessment

The principal of Leymaster Environmental Consulting, LLC whose seal and signature appear hereon, has reviewed this report. No staff member of LEC has any interest or contemplated interest, financial or otherwise, in the subject or surrounding properties, or in any entity which owns, leases, or occupies the subject or surrounding properties, or which may be responsible for environmental issues identified during the course of this investigation, or has any personal bias with respect to the parties involved. Phase I environmental assessments are non-comprehensive by nature and are unlikely to identify all environmental problems or eliminate all risk. This report is a qualitative assessment. LEC offers a range of investigative and engineering services to suit the needs of our clients, including more quantitative investigations. Although risk can never be eliminated, more detailed and extensive investigations yield more information, which may help the Client understand and better manage risks. Because such detailed services involve greater expense, we ask our clients to participate in identifying the level of service, which will provide them with an acceptable level of risk. Please contact the signatories of this report if you would like to discuss this issue of risk further.

LEC performed this Phase I ESA in general accordance with the guidelines set forth in ASTM E 1527-13 and EPA AAI, and subsequently approved by you as our Client. The conclusions represent professional judgments and are based upon the findings of the investigations identified in the report and the interpretation of such data based on our experience and expertise according to the existing standard of care. No other warranty or limitation exists, either expressed or implied. Environmental issues not specifically addressed in the report were beyond the scope of our work and were not included in our evaluation. The findings and

conclusions contain all of the limitations inherent in the methodologies that are referred to in ASTM E 1527-13.

2.5 Special Terms and Conditions

The conclusions and findings set forth in this report are strictly limited in time and scope to the date of the evaluations. The conclusions presented in the report are based solely on the services described therein, and not on scientific tasks or procedures beyond the scope of agreed-upon services or the time and budgeting restraints imposed by the client. Unless specifically stated otherwise in the report, no chemical analyses were performed during the course of this ESA.

Some of the information provided in this report is based upon personal interviews and upon research of available documents, records, and maps held by the appropriate government and private agencies. The interviews and research are subject to the limitations of historical documentation, availability, and accuracy of pertinent records and the personal recollections of those persons contacted.

2.6 User Reliance

All reports, both verbal and written, are for the benefit of Duke Realty, its successors and assigns. Any party other than Duke Realty who would like to use this report shall notify Leymaster Environmental Consulting, LLC of such intended use in writing. Based on the intended use of the report, LEC may require that additional work be performed and that an updated report be issued. Noncompliance with any of these requirements by the aforementioned parties or anyone else will release LEC from any liability resulting from the use of this report by any unauthorized party.

3. **Site Description**

3.1 Location and Legal Description

The Property is located on the north side of Los Angeles Street in the City of Irwindale, California. The cross streets are Rivergrade Road and Littlejohn Street.

The Property is recorded with the County of Los Angeles Tax Assessor's Office as Assessor's Parcel No. 8535-020-007. See ***Environmental Lien Report*** in ***Appendix D*** for a complete description.

3.2 Site and Vicinity General Characteristics

The Property is located in a commercial and industrial area in the City of Irwindale, California. Topography at the site is flat with commercial and or industrial developments on the east and west adjacent properties. The Vulcan Materials quarry is on the south adjacent property and the San Gabriel (605) Freeway is to the north.

3.3 Current Use of the Property

The property has been unoccupied since July, 2017.

3.4 Descriptions of Structures, Roads, Other Improvements

The Property consists of approximately 24.5 acres. Development includes an approximate 20,000 square-foot brick and concrete office building with a flat roof and steel-framed windows and doors at the south end of the Property. A small mobile office is attached at the northeast corner of the building. An approximate 2,883 square-foot office building and an approximate 9,618 square-foot maintenance building are present to the east of the main building. A covered outdoor former welding shop is present east of the maintenance building. Parking lots are at the south end of the Property. The remaining area is undeveloped and was used for product process lines. Large concrete mixing equipment is present at the site.

The following utilities service the site:

Electric:	Southern California Edison
Gas:	Southern California Gas Company
Water:	Valley County Water District
Sewer:	Los Angeles County Sanitation District

3.5 Current Uses of Adjoining Properties

During the vicinity reconnaissance, LEC observed the following land use on properties in the immediate vicinity of the Property.

North: Rivergrade Road and the San Gabriel (605) Freeway.

South: Los Angeles Street. Beyond is Vulcan Materials, located at 13000 Los Angeles Street.

East: Lincoln Pacific Builders and RenyMed, located at 4501 and 4505 Littlejohn Street, respectively. Multi-tenant light

industrial developments, located at 4507, 4509, 4601-4621 and 4701-4801 Littlejohn Street. Gardensun USA, Proper Enlightment Meditation Center of California, Inc., Comeco Inc., and Laurence Doors, located at 4513, 4515, 4517 and 4525 Littlejohn Street, respectively.

Jewel Tunnel Imports**,** Golden Packaging Plus, and NJ Investments located at 13100, 13110 and 13111 Spring Street, respectively. Multi-tenant light industrial and office developments located at 13121, 13130-13180 and 13211-13221 Spring Street.

Multi-tenant office developments, located at 13100-13300 Brooks Drive.

West: Southern California Edison Operations Support and Supply Chain Management Facility, located at 13025 Los Angeles Street.

4. User Provided Information

Pursuant to ASTM E 1527-13 and EPA AAI, LEC requested the following site information from Mr. Michael Weber on behalf of Duke Realty (user of this report).

4.1 Title Records

Ticor Title Company provided a Preliminary Title Report. No items of an environmental concern were noted. Although a Chain of Title was not reviewed, it does not represent a data gap because the historical uses have been identified through other resources.

4.2 Environmental Liens or Activity and Use Limitations

LEC requested information from Mr. Weber regarding knowledge of environmental liens, activity and use limitations for the Property. Mr. Weber was not aware of any environmental liens associated with the Property and had no knowledge of any use or activity limitations. Additionally, according to the EDR Lien Report and the title report, no environmental liens were identified for the Property.

4.3 Specialized Knowledge

LEC completed a Phase I ESA of the Property in 2016.

4.4 Commonly Known or Reasonably Ascertainable Information

LEC inquired with the site contact, Mr. Weber regarding any specialized knowledge of environmental conditions associated with the Property. Mr. Weber was not aware of any environmental conditions associated with the Property. An Internet search of the Property did not reveal any pertinent additional information.

4.5 Valuation Reduction for Environmental Issues

LEC inquired with the site contact, Mr. Weber regarding any knowledge of reductions in property value due to environmental issues. Mr. Weber indicated the Property is valued at fair market value.

4.6 Owner, Property Manager, and Occupant Information

The owners of the Property are TW Los Angeles, LLC (as to an undivided 50% interest), San Pietro Properties, LLC (as to an undivided 37.5% interest) and Garmatt Properties, LLC (as to an undivided 12.5% interest).

4.7 Reason for Performing Phase I ESA

The purpose of this Phase I ESA was to identify existing or potential Recognized Environmental Conditions (as defined by ASTM Standard E 1527-13) in connection with the Property. This ESA was also performed to permit the user to satisfy one of the requirements to qualify for the *innocent landowner, contiguous property owner, or bona fide prospective purchaser* limitations on scope of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) liability (hereinafter, the "*landowner liability protections," or "LLPs"*). ASTM Standard E 1527-13 constitutes "*all appropriate inquiry* into the previous ownership and uses of the Property consistent with good commercial or customary practice" as defined at 42 U.S.C. §9601(35) (B). User continuing obligations, as defined in the 2002 Brownfield Amendments, consist of the following:

- Complying with land use restrictions and institutional controls;
- Taking "reasonable steps" with respect to hazardous substances releases;
- Providing full cooperation, assistance, and access to persons that are authorized to conduct response action or natural resource restoration;

- Complying with information requests and administrative subpoenas; and

- Providing all legally required notices.

LEC understands that the findings of this assessment will be used by Duke Realty in connection with a pending financial transaction involving the Property.

4.8 Other

The users did not provide any other information.

5. Record Review

A Government Records Report by EDR for the Property and surrounding area has been provided as ***Appendix B***. Information pertaining to the Property and neighboring sites not included in the EDR report has been provided as ***Appendix C***.

5.1 Standard Environmental Record Sources

A complete listing of sources has been provided as ***Appendix B***.

The Property is listed in the following databases searched by EDR.

The HAZNET list is generated from hazardous waste manifests received from the Department of Toxic Substance Controls. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 to 1,000,000 annually, representing approximately 350,000 to 500,000 shipments. Data from non-California manifests and continuation sheets are not included at the present time. Data are from manifests submitted without correction, and therefore may contain some invalid values of data elements such as generator ID, TSD ID, waste category, and disposal method. Spancrete of California is included in this database from 1997 to 2000 for the disposal of varying quantities of other organic solids and an unspecified oil-containing waste. No violations or Notices to Comply were reported. Clark Pacific is included in 2013 and 2014 for the disposal of varying quantities of other organic solids and waste oil/mixed oil. No violations or Notices to Comply were reported. Hanson Structural Precast is included from 2001 to 2016 for the disposal of varying quantities of other organic solids, off-specification, aged or surplus organics, waste oil, mixed oil and 0.41 tons of tank bottom waste. No violations or Notices to Comply were reported.

Los Angeles County Hazardous Materials System (LACHMS) identifies hazardous materials users. Spancrete of California Inc. is included in this database under four Facility IDs. Permit status is shown as closed or removed for each facility; no other information is provided. United Ready Mixed Concrete is included under two Facility IDs. Permit status is closed; no other information is provided. Heidelberg Cement Group is included as a closed facility. No other information is provided.

Statewide Environmental Evaluation and Planning System (SWEEPS) is an underground storage tank listing which was updated and maintained by a company contracted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list. Hanson Structural Precast Inc. is included in this database resulting from former underground storage tanks. No other information is provided.

The Underground Storage Tank (UST) database contains registered underground storage tanks regulated under Subtitle 1 of the Resource Conservation and Recovery Act. Spancrete of California is included in this database under Facility ID 20651 resulting from former underground storage tanks. No other information is provided.

The Historical Underground Storage Tank (HIST UST) list. Hanson Structural Precast Inc. is included in this database. GeoTracker data indicates two 1,000-gallon fuel tanks were installed at the Property in 1967. No other information was reported. These tanks were removed in 1986.

The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities. Clark Pacific Irwindale is included in this database. No violations or Notices to Comply were reported. Hanson Structural Precast Inc was also included in this database. No violations or Notices to Comply were reported.

NPDES: A listing of National Pollutant Discharge Elimination System (NPDES) permits, including stormwater. Clark Pacific Irwindale is included as a terminated facility. No other information is provided. No violations or Notices to Comply were reported. Hanson Structural Precast Inc is also included in this database with no reported facility status. No other information is provided. No violations or Notices to Comply were reported.

ECHO: Enforcement & Compliance History Information (ECHO) provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide. Hanson Spancrete Pacific Inc. is included in this database. No other information is provided. No violations or Notices to Comply were reported. Clark Pacific Irwindale is also included in this database. No other information is provided. No violations or Notices to Comply were reported.

Facility Index System (FINDS) is a computerized inventory of all facilities that are regulated or tracked by the U. S. Environmental Protection Agency. The FINDS list contains both facility information and "pointers" to other sources that contain more detail. The FINDS list is a compilation of other database sources. The FINDS list indicates that the subject site is also on the Facility Registry System (FRS), Biennial Reporting System (BRS), Toxic Chemical Release Inventory System (TRIS) and the Resource Conservation and Recovery Act Information system (RCRAINFO). Inclusion on these lists does not by itself indicate a significant environmental threat to the subject site. Hanson Spancrete Pacific Inc. is included in this database. No other information is provided. No violations or Notices to Comply were reported. Clark Pacific Irwindale is also included in this database. No other information is provided. No violations or Notices to Comply were reported. Hanson Structural Precast Inc is also included in this database. No other information is provided. No violations or Notices to Comply were reported.

The California Waste Discharge System (WDS) list sites which have been issued waste discharge requirements. Hanson Structural Precast Inc. is included in this database. No violations or Notices to Comply were reported.

Well Investigation Program (WIP) database lists cases in the San Gabriel and San Fernando Valley area. Hanson Structural Precast Inc. is included as an historical file status. No other information is provided.

Sites listed by EDR within 1/2 mile of the Property for NPL and CERCLIS and within 1/8 mile for all other databases are discussed below.

Superfund, also known as the National Priority List (NPL) database, is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA:

- San Gabriel Valley (Area 2) Sunset & San Bernardino Freeway

Resource Conservation and Recovery Information System – Large Quantity Generator (RCRIS-LQG) report contains information pertaining to facilities that generate more than 1,000 kilograms of EPA regulated hazardous waste, or over 1 kg of acutely hazardous waste per month:

- Southern CAL Edison 13025 E. Los Angeles Avenue

The Resource Conservation and Recovery Information System – Small Quantity Generator (RCRIS-SQG) database lists sites that generate between 100 kilograms and 1,000 kilograms of EPA regulated hazardous waste per month:

- UPM Inc. 13245 Los Angeles Street
- MacDonald Carbide Company 4510 Littlejohn Street

The Leaking Underground Storage Tank (LUST) Incident Report contains an inventory of reported leaking underground storage tank incidents. The data come from the State Water Resources Control Board Leaking Underground Storage Tank Information System:

- Industrial Asphalt 13130 Los Angeles Street
- UPM Inc. 13245 Los Angeles Street
- Universal Plastic Mold 13425 Los Angeles Street
- SCE – Irwindale Corp Warehouse 13025 Los Angeles Street

The Underground Storage Tank (UST) database contains registered underground storage tanks regulated under Subtitle 1 of the Resource Conservation and Recovery Act:

- Bob Zadium Trucking 4600 Rivergrade Road
- SCE – Irwindale Corp Warehouse 13025 Los Angeles Street

Aboveground Petroleum Storage Tank Facilities (AST) is a listing of aboveground storage tank petroleum storage tank locations.

- SCE Irwindale Automotive Service 13025 E Los Angeles Street
- Not Reported 13025 E Los Angeles Street

Statewide Environmental Evaluation and Planning System (SWEEPS) is an underground storage tank listing which was updated and maintained by a company contacted by the SWRCB in the early 1980's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list:

- Bob Zadium Trucking 4600 Rivergrade Road

- Industrial Asphalt 13130 Los Angeles Street
- Brooks Products, Inc. 4505 Littlejohn Street
- SCE Irwindale Automotive Service 13025 E Los Angeles Street
- UPM Inc. 13245 Los Angeles Street

The Historical Underground Storage Tank (HIST UST) list:

- Bob Zadium Trucking 4600 Rivergrade Road
- Industrial Asphalt 13130 Los Angeles Street
- Brooks Products 4505 Littlejohn Street
- SCE Irwindale Automotive Service 13025 E Los Angeles Street
- SCE – Irwindale Corp Warehouse 13025 Los Angeles Street
- UPM Inc. 13245 Los Angeles Street

The California Facility Inventory Database Underground Storage Tank (CA FID UST) list contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board:

- Brooks Products 4505 Littlejohn Street
- UPM Inc. 13245 Los Angeles Street

US Mines: Mines Master Index File. The source of this database is the Dept. of Labor, Mine Safety and Health Administration:

- Calmat Company None Given

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]:

- Industrial Asphalt 13130 Los Angeles Street
- UPM Inc. 13245 Los Angeles Street

Well Investigation Program database lists cases in the San Gabriel and San Fernando Valley area:

- J-Mark Computer 13111 Brooks Drive
- United Air Condition 13200 Brooks Drive
- Control Optics 13211 Brooks Drive
- Aslan Computer Corporation 13300 Brooks Drive
- Quik Strap Inc. 13300 Brooks Drive
- Western Power System 13311 Brooks Drive
- AMS, Inc. 4801 Littlejohn Street
- Medi/Nuclear Corp. 4501 Littlejohn Street
- Pack West 4505 Littlejohn Street

- MacDonald Carbide 4510 Littlejohn Street
- Gibraltar Products 4525 Littlejohn Street
- SCE Irwindale Automotive Service 13025 E Los Angeles Street
- H & L Company 13263 Los Angeles Street
- Universal Plastic Mold 13245 Los Angeles Street

None of the sites listed in the Orphan summary page of the EDR report were noted in the general area of the Property.

5.2 Additional Record Sources (See ***Appendix F***)

5.2.1 California Department of Toxic Substances Control

The Department of Toxic Substances Control (DTSC) offices located in Chatsworth and Cypress, California reported no files or records associated with the Property.

5.2.2 South Coast Air Quality Management District

A search of the South Coast Air Quality Management District's Facility Information Detail (FIND) database revealed the following files.

Facility ID 173790 Clark Pacific

Inactive permits for concrete batch equipment, a cement storage tank and activated carbon adsorber equipment. No violations or Notices to Comply were on file.

Facility ID 126830 Hanson Spancrete Pacific Inc.

Inactive permits for concrete batch equipment, a cement storage tank, activated carbon adsorber equipment, service station storage & dispensing and amine treating. No violations or Notices to Comply were on file.

Facility ID 760 Spancrete of California

Inactive permits for cement conveying, concrete batch equipment and dry filter. No violations or Notices to Comply were on file.

Facility ID 39859 Spancrete of California

Inactive permits for service station storage & dispensing, amine treating, concrete batch equipment, activated carbon adsorber,

cement storage tank and control ETO sterilization hospital equipment. No violations or Notices to Comply were on file.

5.2.3 Los Angeles County Department of Public Health

The Los Angeles County Department of Public Health reported files for Spancrete of California and Hanson Structural Precast.

Spancrete of California

On file was an inspection report dated 1994. A Notice of Violation was issued requesting that the company provide a system for the legal disposal of waste from an onsite steam cleaner. Also on file, was an inspection report dated 1988. Spillage from hydraulic fluid tanks onto the ground was noted, and a Notice of Violation to contain and properly dispose of wastes was issued. Hydraulic fluid does not represent an environmental concern.

Hanson Structural Precast

On file were Hazardous Materials Inventory Statements for 1999-2010. The following materials were included:

- Triethanelamine
- Sodium Dodecylbenzene Sulfonate
- Oxygen
- Transmission Fluid
- Motor Oil
- Hydraulic Oil
- Calcium Nitrate
- Waste Oil
- Lighosulfonate
- Natural Gas Methane

Additionally, a Notice of Violation for failure to submit an inventory of hazardous materials, dated November 2012, was on file.

Also on file, were routine inspection reports, two Business Owner/Operator Identifications dated 1999 and 2011, three Facility Information Reports dated 2004, 2010 and 2012, and a Business Plan Annual Renewal Certification dated 2010. No items of an environmental concern were noted.

Clark Pacific Irwindale

On file were routine inspection reports and four Notices of Violation, all labeled minor. These violations are as follows: failure to electronically submit emergency response procedures, failure to electronically submit a site map, failure to operate facility in a manner that minimizes a fire, explosion, or a release of hazardous waste, and failure to properly label hazardous waste accumulation containers and portable tanks. A subsequent update to these violations was on file indicating that no further action is required, dated October 2016. A copy of this update is included in ***Appendix F*** of this report.

Also on file, was an inspection report stating the company was out of business, dated October 2017.

5.2.4 Los Angeles County Sanitation District

The Los Angeles County Sanitation District reported no files or records associated with the Property.

5.2.5 Los Angeles County Department of Public Works

A search of the County of Los Angeles Department of Public Works' CleanLA database revealed the following files associated with the Property. LEC reviewed the physical files at the Department of Public Works.

File No. 009315-009116 Spancrete

This file contained documentation on the removal of two 1,000-gallon fuel tanks in November 1986. Reportedly, the tanks were installed in 1967. The tanks were removed under the oversight of the Department of Public Works (Closure Permit No. 2147B). Soil samples collected beneath the tanks contained TPH ranging from 46.5 ppm to 254.2 ppm. Depth to groundwater was reported at 150 to 175 feet below grade. The Department of Public Works issued a NFA Letter in December 1986. A copy of the NFA letter is included in ***Appendix F*** of this report. Following tank removal activities, a 4,000-gallon dual compartment fuel tank was installed in the former tank excavation.

Also on file was an application for an Industrial Waste Permit. The application was for a closed system, which reclaimed wastewater generated from washing down of equipment. Constituents of the

waste discharge are reported as "concrete out of specification". Raw materials used were reported as rock, sand, cement and water. No items of an environmental concern were noted.

File No. 009315-039989 Hanson Spancrete Pacific Inc.

On file was a Notice of Non-Compliance (V403785) for non-compliant conditions of material configurations that resulted in non-fiberglass metallic material in contact with backfill material. The non-compliance notice required an inspection, dated for February 2004.

This file also contained documentation on the removal of the 4,000-gallon fuel tank installed in 1986. The tank along with the related dispensers and piping were removed in February 2004 under the oversight of the Department of Public Works (Closure Permit No. 397470). Soil samples were collected beneath the tank and dispensers. No piping run samples were collected because the distance was less than 20 feet. The analytical results were below detection limits for TPH as gasoline, TPH as diesel, VOCs, fuel oxygenates and organic lead. The Department of Public Works issued a NFA letter in March 2007. A copy of the NFA letter is included in ***Appendix F*** of this report.

File No. 009315-054475 Heidelberg Cement Group

Industrial Waste Permit No. 000652462 issued in July 2010. The permit was issued for a closed loop recycling system. Waste constituents were reported as concrete and water. A Notice of Violation Order to Comply was issued on May 11, 2010 notifying the new owner that a new Industrial Waste Disposal Permit is required after a change of ownership. No items of an environmental concern were noted.

A 2016 Phase I ESA done by LEC found on file two Notices of Non-Compliance that were issued on April 7 and 29, 2010 notifying Heidelberg that proof of disposal is required for the Hotsy tank/pit sludge. No items of environmental concern were noted.

File No. 009315-058175 Clark Pacific

On file was Industrial Waste Permit No. 000750091 in July 2013. The permit is for a closed loop recycling system. The system includes a water-holding tank with a high-level alarm. The permit notes the system is to be cleaned out every six months. Wastewater

producing operations are described as washing of equipment and the method of disposal for wastewater is offsite. No items of an environmental concern were noted.

An administrative Notice of Violation was issued in February 2014. The notice indicates the Hotsy tank is no longer in use; however, equipment washing is still done. Also on file, was a Self-Monitoring report for 2013.

File No. 0009315-020651 Spancrete of California

On file was Industrial Waste Permit No. 00010943 in September 1994. The permit is for a closed loop recycling system.

Also on file, were two Notices of Non-Compliance and one Notice of Violation (V186254). The first Notice of Non-Compliance was in February 1996 requiring an annual certification of the Leak Detection System for underground tanks. Results of tests regarding leak detection were on file, dated March 1996, showing both tanks as passing.

The Notice of Violation (V186254) was filed in February 1997 for failure to follow approved plans for the Industrial Waste facility and the need for a National Pollutant Discharge Elimination System permit. In May 1997, a second Notice of Non-Compliance was filed for failing to file plans and receive an Industrial Waste Permit, failure to properly install permitted Industrial Waste Facilities, and failure to file for a discharge permit with the State Regional Water Control Board.

The remainder of the file consisted of an Underground Storage Tank Facility compliance certificate (No. 21023), general correspondences, routine inspection reports and tank inspection reports. No items of an environmental concern were noted.

File No. 009315-041609 Hanson Spancrete Pacific Inc.

On file Industrial Waste Permit No. 000415981 for a closed loop system. Also on file, were routine inspections reports; no items of an environmental concern were noted.

File No. 009315-047866 Spancrete of California

According to a Department of Public Works representative, this is a stormwater file. A physical copy was not available for review.

5.2.6 Regional Water Quality Control Board

The Regional Water Quality Control Board reported File Nos. 419I000771, 108.1712 and 419I024305.

File No. 419I000771 Stormwater

This file contained annual monitoring reports submitted by the Building Materials Industry (BMI) Group. Hanson Spancrete Pacific Inc. was a member of BMI. Also on file, was a Stormwater Discharge Pollution Prevention & Monitoring Plan. No items of an environmental concern were noted.

File No. 108.1712 Well Investigation Program (WIP)

This file contained a No Further Action letter dated April 1, 1993 issued by the Regional Water Quality Control Board with respect to the WIP program as it pertains to the San Gabriel Valley Superfund Area. Also on file, was a joint U.S. EPA and Water Board NFA Letter dated 1996. The letter states that an assessment of the facility indicated 1) little or no solvent use; 2) the results of a staff inspection disclosed no solvent use; or 3) completed assessment work indicated no solvent contamination in the soil. Copies of these letters are included in ***Appendix F***.

File No. 419I024305 Stormwater

This file contained annual monitoring reports submitted by the BMI group. Clark Pacific Irwindale was a member of BMI. Laboratory results associated with the annual monitoring reports were on file as well. Also on file, was a Stormwater Pollution Prevention Plan with an included update, several Notices of Intent for general permits to discharge stormwater, a Notice of Termination of stormwater discharge permits for the site and a site inspection report granting the termination in June, 2017. No items of environmental concern were noted.

5.3 Physical Setting Source(s)

5.3.1 Topography

The Baldwin Park Quadrangle topographic map, published by the United States Geological Survey (USGS), was reviewed for this ESA. According to the map, the elevation at the subject site is approximately 360 feet. The topography in the area of the site is generally flat.

5.3.2 Soils/Geology

The subject site is located within the San Gabriel Valley portion of the Los Angeles Basin. The shallow subsurface at the site consists of unconsolidated silty sands that are mapped by the California Division of Mines and Geology (Geologic Map of California, Los Angeles Sheet) as alluvium of Recent age.

5.3.3 Hydrogeology

The site is within the San Gabriel Valley Groundwater Basin. Monitoring wells in the area show that the depth to groundwater beneath the site is greater than 250 feet and that the direction of groundwater flow is to the south. The closest surface-water body to the site is the San Gabriel River, which flow southward approximately 1000 feet west of the site.

5.3.4 Flood Zone Information

A review of the Flood Insurance Rate Maps, published by the Federal Emergency Management Agency, was performed. According to Panel Number 06037C1700F, the Property is located in a moderate to low flood zone. Moderate to low zones consist of areas with less than 1% chance of sheet flooding each year; areas that have less than a 1% chance of sheet flooding with an average depth of less than 1-foot; areas that have less than a 1% chance of stream flooding where the contributing drainage area is less that 1 square-mile; or areas protected from floods by levees. No base flood elevations or depths are shown within these zones.

5.3.5 Oil and Gas Exploration

The State of California Department of Conservation Division of Oil, Gas, and Geothermal Resources (DOG) records were reviewed.

According to the DOGGR - Online Mapping System, no abandoned or active wells are on the Property.

5.4 Historical Use Information on the Property

Development of the Property began in 1967 when the California Portland Cement Company, a manufacturer of cement, ready mix concrete, building and construction supplies, and concrete products began operations. Over the years, there have been several ownership changes; however, the operations have remained the same. Previous occupants include Spancrete of California, United Ready-Mix Concrete, Hanson Spancrete Pacific Inc., Heidelberg Cement Group and Clark Pacific.

5.4.1 Sanborn Fire Insurance Maps

The Sanborn Fire Insurance Maps did not offer coverage for the Property. (See ***Appendix E***).

5.4.2 City of Irwindale Building and Planning Departments

LEC reviewed building permit records as part of an ESA completed in 2016. On file were permits dated 1968 for the installation of two underground fuel tanks and for the installation of a gas pump. Also on file, were permits dated December 1986 and November 2003 for the installation and subsequent removal of a 4,000 underground fuel tank.

No other permits of an environmental concern were noted

Building permits were not reviewed as part of this assessment. However, LEC inspected the property on July 17, 2018 and did not observe any structural changes or modifications to the building or Property.

5.4.3 Aerial Photography

Historical aerial photographs are reviewed in order to assist in identifying any past practices that may have negatively impacted the Property. Photographs from 1928 to 2016 were reviewed concerning this location.

1928 The Property is undeveloped. (See ***Appendix G***.)

1938 No changes are noted from the previous photograph.

1948 No changes are noted from the previous photograph. (See ***Appendix G***.)

1952 No changes are noted from the previous photograph.

1964 No changes are noted from the previous photograph. (See ***Appendix G***.)

1970 Small buildings are present at the south end of the Property. The area north of the buildings is in use. The use appears consistent with current day operations. The northern portion of the Property remains undeveloped. See ***Appendix G***.)

1977 No changes are noted from the previous photograph.

1981 The northern portion of the Property is now in use. The use appears consistent with former operations. (See ***Appendix G)***

1989 No changes are noted from previous photograph.

1990 The Property is developed to present-day appearances. (See ***Appendix G***.)

1994 No changes are noted from the previous photograph.

2002 No changes are noted from the previous photograph. (See ***Appendix G***.)

2005 No changes are noted from the previous photograph.

2009 No changes are noted from the previous photograph.

2010 No changes are noted from the previous photograph.

2012 No changes are noted from the previous photograph.

2016 No changes are noted from the previous photograph. (See ***Appendix G***.)

5.4.4 Historical Topographic Maps

Historical Topographic Maps did not provide pertinent additional information.

5.4.5 Additional Historical Record Sources

Additional historical records were deemed not to be necessary.

5.4.6 Prior Assessment Reports

LEC conducted a Phase I ESA of the Property in 2016. No further investigation was recommended.

5.5 Historical Use Information on Adjoining Properties

By review of the standard historical sources referenced above, the historical uses of the adjoining properties are summarized below:

North: Undeveloped land until sometime after 1952. By 1964, the San Gabriel Freeway (605) is present.

South: Undeveloped land until sometime after 1938. By 1948, the property is in use as a quarry.

East: Undeveloped land until sometime after 1964. By 1970, commercial use.

West: Undeveloped until sometime after 1970. By 1977, commercial use.

6. Site Reconnaissance

6.1 Methodology and Limiting Conditions

The Property was inspected by Myrna Rangel, Project Manager, and Travis Knight, Project Manager, on July 17, 2018. LEC was escorted by Mr. Andrew White, owner representative. The weather at the time of the site visit was sunny and clear.

6.2 General Site Setting

The Property encompasses approximately 24.5 acres; it is situated in a commercial and industrial area of Irwindale, California.

6.3 Exterior Observations

The periphery of the Property and the periphery of the structures were observed.

The parking lots at the south end of the Property appeared in fair condition. Minor surficial staining was noted. The staining appeared to be motor oil. No items of an environmental concern were noted.

The remaining cover is a combination of dirt, concrete and gravel. The portion of the Property were concrete was constructed is vacant, aside from some remaining concrete mixing equipment. Only minor staining was observed throughout. No items of an environmental concern were noted.

LEC noted a fenced area north of the office building that had signs indicating it was an oxygen canister storage area. No oxygen canisters were present in the area. No items of environmental concern were noted.

LEC noted a bermed concrete area with a grated trench running down the middle north of the former welding area. Mr. White indicated that the area was used to wash equipment. LEC noted that no cleaning equipment was present; however, the trench contained residual liquid. No items of environmental concern were noted.

LEC noted a bermed concrete storage area at the southeast corner of the Property with a Hazardous Material Waste Oil sign hanging from it. According to Mr. White, this feature was used to store hazardous waste oil. No staining was noted in the area surrounding the storage area. No items of environmental concern were noted.

6.3.1 Solid Waste Disposal

There was no indication of potentially hazardous material disposal noted during the site reconnaissance.

6.3.2 Surface Water Drainage

Topography at the Property is flat; surface drainage is via sheet flow to the City sewer system.

6.3.3 Wells and Cisterns

No aboveground evidence of wells or cisterns was observed during the site reconnaissance.

6.3.4 Wastewater

No other indication of wastewater treatment was observed.

6.3.5 Additional Site Observations

No additional relevant general site observations were observed during the site reconnaissance.

6.4 Interior Observations

The administrative offices consist of carpeted flooring and acoustic ceiling panels with fluorescent lighting. No items of an environmental concern were noted.

Quality Control

This area was used to conduct stress tests of the concrete and consists of concrete flooring and fluorescent lighting. No drains or sumps were observed. No items of an environmental concern were noted.

Maintenance Shop

The maintenance shop consists of concrete flooring and drop fluorescent lighting. Surficial staining was noted; the staining appeared to be heavy oil. No drains or sumps were observed. No items of an environmental concern were noted.

Welding Area

The welding area is a covered open space consisting of concrete flooring. Minor staining of the concrete floor was noted. No drains or sumps were observed. No items of an environmental concern were noted.

6.5 Potential Environmental Conditions

6.5.1 Hazardous Materials and Petroleum Products Used or Stored

No other evidence of the use of hazardous materials or wastes was observed on the Property.

6.5.1.1 Unidentified Containers and Drums

No other unidentified containers or drums were observed on the Property during the site reconnaissance.

6.5.1.2 Disposal Locations of Regulated/Hazardous Waste

A bermed concrete container in the southeast corner of the Property had been used as hazardous material waste oil storage. LEC noted that all hazardous waste had been removed and the storage was empty.

No other obvious indications of hazardous waste generation or storage were observed on the Property or were identified during interviews.

6.5.2 Evidence of Releases

No obvious indications of hazardous material or petroleum product releases, such as stained areas or stressed vegetation were observed during the site reconnaissance or reported during interviews.

6.5.3 Polychlorinated Biphenyls (PCBs)

Older transformers and other electrical equipment could contain polychlorinated biphenyls (PCBs) at a level that subjects them to regulation by the U.S. EPA. PCBs in electrical equipment are controlled by United States Environmental Protection Agency regulations 40 CFR, Part 761. Under the regulations, electrical equipment can be classified into three categories:

- Less than 50 parts per million (ppm) of PCBs – *"Non-PCB" transformer*
- 50 ppm-500 ppm – *"PCB-Contaminated" electrical equipment*
- Greater than 500 ppm – *"PCB" transformer*

A pad-mounted transformer (#P5053437) is located in the welding area. No staining or discoloration was noted at the base of the transformer.

6.5.4 Landfills

No evidence of an on-site landfill was observed or reported during the site reconnaissance. A search of the State of California Solid Waste Information System did not indicate the presence of an historical landfill. In addition, the EDR report includes a review of listings concerning landfills; there is no indication that landfills have been located on or within on-half mile of the Property.

6.5.5 Pits, Ponds, Lagoons, Sumps, and Catch Basins

No evidence of on-site pits, ponds, lagoons was observed or reported during the site reconnaissance. No evidence of sumps or catch basins, other than used for storm water removal, was observed or reported during the site reconnaissance.

6.5.6 On-site Aboveground and Underground Storage Tanks

Two 1,000-gallon underground fuel tanks and one 4,000-gallon underground fuel tank were formerly onsite. The tanks were removed and NFA letters were issued. No other underground storage tanks were observed during the site reconnaissance or were reported during interviews.

6.5.7 Radiological Hazards

No radiological substances or equipment were observed during the site reconnaissance or were reported during interviews.

6.5.8 Drinking Water

The Property is supplied by the Valley County Water District. According to a water quality report dated 2015, the drinking water supplied to the Property is within state and federal standards, including lead and copper. Water sampling was not conducted at the Property to verify water quality.

6.5.9 Additional Hazard Observations

No additional hazards were observed on the Property.

6.5.10 Asbestos-Containing Building Materials

Although a survey for asbestos-containing building materials was not within the requested scope of work, this building was built during a period when asbestos-containing materials were commonly used in flooring, insulation, roofing, or many other building materials. Therefore, asbestos-containing building materials are most likely present at the site. The most likely materials to contain asbestos are floor tiles, “popcorn” ceilings, and insulation normally involved with heating, ventilation and air conditioning units and roofing materials. These observations do not represent a certified asbestos inspection, and laboratory analysis is required to positively identify any asbestos-containing materials.

6.5.11 Lead-Based Paint

A survey for lead-based paint (LBP) was not within the requested scope of work. Based on information provided by Forensic Analytical Specialties, Inc., which conducts LBP surveys, LBP was extensively used in buildings constructed by the 1920s. The paint industry voluntarily cut back on the amount of lead used in paint in 1955, but LBP has been commonly used up to the present throughout the construction industry, especially on frictions and impact surfaces (doors, windows, floors, etc.) and in bathrooms, kitchens, and exteriors for moisture resistance. The structure was constructed during the period when LBP was not extensively used; therefore, LBP is not likely to be present, but this cannot be verified without a certified LBP inspection.

6.5.12 Mold

LEC observed the accessible interior areas of the Property structure(s), for the presence of conspicuous mold or observed water intrusion or accumulation. LEC did not note conspicuous visual or olfactory indications of the presence of mold, nor did LEC observe obvious indications of significant water damage. No sampling was conducted as part of this assessment.

This activity was not designed to discover all areas, which may be affected by mold growth on the Property. Rather, it is intended to give the client an indication as to whether or not conspicuous (based on observed areas) mold growth is present at the Property. This evaluation did not include a review of pipe chases, HVAC systems or areas behind enclosed walls and ceilings.

6.5.13 Radon

The U.S. EPA and the U.S. Geological Survey have evaluated the radon potential in the United States and have developed a map to assist National, State, and local organizations to target their resources and to assist building code officials in deciding whether radon-resistant features are applicable in new construction. The map divides the country into three radon zones and is used to assign each of the counties in the United States to one of these zones based on radon potential. Each zone designation reflects the average short-term radon measurement that can be expected to be measured in a building without the implementation of radon control methods. The radon zone designation of the highest priority is Zone 1.

- Zone 1 - Highest Potential (greater than 4 pCi/L)

- Zone 2 - Moderate Potential (from 2 to 4 pCi/L)
- Zone 3 – Low Potential (less than 2 pCi/L)

A review of the EPA Map of Radon Zones places the Property in Zone 2, where average predicted radon levels are from 2 to 4 pCi/L.

6.5.14 EDR Vapor Encroachment Screen

A "Tier 1 (non-intrusive) Vapor Encroachment Screening (VES)" was completed in accordance with the methodology set forth in ASTM E2600-10 *"Standard Guide for Vapor Encroachment Screening on Property Involved in Real Estate Transactions"*. The purpose of the Tier 1 VES is to conduct an initial screen to identify, to the extent feasible, a potential vapor encroachment condition (VEC) in connection with the Property with respect to chemicals of concern that may migrate as vapors into existing or planned structures on the Property due to contaminated soil and or groundwater on the Property or within close proximity to the Property.

Based on the results of EDR's E2600-10 Tier 1 Vapor Encroachment Screening, included as ***Appendix K,*** vapor encroachment does not appear to be a concern at the Property.

7. Interviews

7.1 Interview with Owner

LEC interviewed Mr. Andrew White on July 17, 2018. Mr. White also completed a questionnaire supplied by LEC. Mr. White indicated he is not aware of any underground storage tanks on the property nor is he aware of any environmental conditions associated with the Property. Mr. White indicated that the Property is in a M2 (heavy industrial) zone and that he is not aware of any other AULs or deed restrictions on the property. Mr. White further indicated that hazardous materials, such as lubrication, hydraulic and motor oil, were used on the Property. See ***Appendix J*** for owner provided information.

7.2 Interview with Site Manager

There is no Site Manager.

7.3 Interview with Occupants

Not applicable; the Property is unoccupied.

7.4 Interview with Local Government Officials

See ***Section 5.2*** of this report.

7.5 Interview with Others

No other interviews were conducted by LEC.

8. Findings

Leymaster Environmental Consulting, LLC completed a Phase I ESA of the property located at 13131 Los Angeles Street, Irwindale, California.

Two 1,000-gallon fuel underground storage tanks and a 4,000-gallon fuel underground storage tank were formerly onsite.

The Property is listed in the HAZNET, LACHMS, NPDES, WDS, WIP, FINDS ECHO and CIWQS databases searched by EDR

The Property was also included in the SWEEPS, UST and HIST UST databases searched by EDR.

There are a few sites within 1/8 mile of the Property noted in the EDR Report.

9. Opinions

Two 1,000-gallon underground fuel tanks were installed in 1967 and removed in 1986. The tanks were removed under the oversight of the DPW. Analytical results from soil samples collected during tank removal activities indicated concentrations of TPH ranging from 46.5 ppm to 254.2 ppm. Depth to groundwater was reported at 150 to 175 feet below grade. The DPW issued a NFA Letter in December 1986. Following tank removal activities, a 4,000-gallon dual compartment fuel tank was installed in the former tank excavation area. This tank and the related dispensers and piping were removed in February 2004 under the oversight of the DPW. Soil samples collected beneath the tank and dispensers were below detection limits for TPH as gasoline, TPH as diesel, VOCS, fuel oxygenates and organic lead. Soil samples were not collected along the piping run because the distance was less than 20 feet. The DPW issued a NFA letter in March 2007. Based on this, the former tanks do not represent an environmental concern.

The Property is listed in the HAZNET, LACHMS, NPDES, WDS, WIP, FINDS ECHO and CIWQS databases searched by EDR. In each case, no substantive information was provided that would indicate a significant environmental threat to the Property.

The Property was also included in the SWEEPS, UST and HIST UST databases searched by EDR. Inclusion in these databases is resulting from the former underground storage tanks discussed above and does not represent an environmental concern.

No environmental concerns exist as a result of the sites listed in the EDR Report and supplemental agency review attachments of this report due to either the distance from the Property, the absence of violations, or responsible parties have been identified for the environmental concern.

10. Conclusions

Leymaster Environmental Consulting, LLC has performed a Phase I ESA of the property located at 13131 Los Angeles Street, Irwindale, California in conformance with the scope of limitations of American Society for Testing and Materials (ASTM), Standard Practice for Assessment Process, E 1527-13 and EPA Final All Appropriate Inquiries (AAI) standard practices. Any exceptions to, or deletions from this practice are described in ***Section 2.3*** of this report.

This Phase I ESA revealed no evidence of environmental conditions associated with the Property. No further investigation is recommended at this time.

11. Deviations

This Phase I Environmental Site Assessment substantially complies with the scope of services and ASTM E 1527-13 and EPA AAI, as amended, except for exceptions and/or limiting conditions discussed in ***Section 2.4***.

12. Additional Services

No additional services, outside the scope of this Phase I ESA, were contracted for between the user and LEC.

13. References

American Society for Testing and Materials, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessments Process, ASTM Standard E 1527-13.

State of California Department of Conservation, Division of Oil and Gas Geothermal Resources.

South Coast Air Quality Management District, Public Records Request.

Department of Toxic Substances Control, Public Records Act Request.

Los Angeles County Department of Public Health, Public Records Act Request.

Los Angeles County Sanitation District, Public Records Act Request.

Los Angeles County Department of Public Works, Public Records Act Request.

Regional Water Quality Control Board, Public Records Act Request.

City of Irwindale Building and Safety Department, Public Records Act Request.

U.S.GS Water-Supply Paper 1109 *Ground-water Geology of the Coastal Zone Irwindale-Santa Ana Area, California*. 1956.

California Department of Water Resources, Planned Utilization of the Groundwater Basins in the Coastal Plain of Los Angeles County, Bulletin 104-A, Reprinted 1988.

Environmental Data Resources, Incorporated, Government Records Report, July 5, 2018.

Environmental Data Resources, Incorporated, Preliminary Sanborn Map Report, July 3, 2018.

Environmental Data Resources, Incorporated, Aerial Photography Print Service, July 5, 2018.

Environmental Data Resources, Incorporated, City Directory, July 5, 2018
.
Environmental Data Resources, Incorporated Environmental Lien Report, July 7, 2018.

Environmental Data Resources, Vapor Encroachment Screen, July 19, 2018.

14. Signature of Environmental Professionals

I declare that to the best of my professional knowledge and belief, I meet the definition of environmental professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed the all-appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Mark Leymaster
Environmental Professional

Travis Knight
Staff Engineer

15. Qualifications of Environmental Professionals

Mark Leymaster

Mr. Leymaster is the President of Leymaster Environmental Consulting, LLC. Mr. Leymaster is a Registered Professional Engineer in the State of California (M23031) and is also a Registered Environmental Assessor II in the State of California (20057). Mr. Leymaster has over 20 years of experience as an environmental consultant.

Mr. Leymaster's responsibilities have included Phase I property transfer assessments, compliance audits, permitting, soil and groundwater investigations, remediation projects, litigation support, expert testimony, overseeing manufacturing facility closures, and the closure of Transport, Storage, and Disposal facilities.

His projects have included defining the lateral and vertical extent of soil and groundwater contamination of sites for both organics and inorganics. Agency sign-offs for both groundwater and soil remediation sites have been received for systems designed, installed, and operated by Mr. Leymaster. He has evaluated many Brownfield sites for potential buyers and has overseen the successful property transaction, remediation installation and development of the properties. Mr. Leymaster has conducted approximately 200 Phase I environmental site assessments at a variety of commercial, industrial, and residential properties including: defense manufactures, plating facilities, printing shops, salvage yards, foundries, dry cleaners, apartment complexes, office buildings, shopping centers and automotive maintenance facilities. He has performed approximately 150 subsurface soil and groundwater investigations. He has evaluated and completed remediation of over 30 facilities contaminated with metals, chlorinated solvents, volatile organic compounds and acids.

Travis Knight

Mr. Knight is a Staff Engineer at Leymaster Environmental Consulting, LLC. Mr. Knight has a Bachelor of Science degree from the University of California San Diego in the study of Environmental Engineering. Mr. Knight is a Registered Engineer in Training with the State of California (163532).

Mr. Knight's experience includes soil testing and scientific research for the purpose of soil remediation.

16. Appendices

APPENDIX A

LOCAL AREA MAP

Leymaster Environmental Consulting, LLC 5500 E. Atherton St., Suite 210 Long Beach, CA 90815	Local Area Map 13131 Los Angels Street Irwindale, California 91706 Appendix A — July 23, 2018

APPENDIX B

EDR GOVERNMENT RECORDS REPORT

13131 Los Angeles Street
13131 Los Angeles Street
Irwindale, CA 91706

Inquiry Number: 5351994.2s
July 03, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

13131 LOS ANGELES STREET
IRWINDALE, CA 91706

COORDINATES

Latitude (North):	34.0944880 - 34˚ 5' 40.15''
Longitude (West):	117.9855020 - 117˚ 59' 7.80''
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	409088.2
UTM Y (Meters):	3772876.2
Elevation:	355 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5619056 BALDWIN PARK, CA
Version Date:	2012
Southwest Map:	5630799 EL MONTE, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140515
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
13131 LOS ANGELES STREET
IRWINDALE, CA 91706

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	SPANCRETE OF CALIFOR	13131 LOS ANGELES ST	LOS ANGELES CO. HMS		TP
A2	SPANCRETE OF CALIFOR	13131 LOS ANGELES ST	UST		TP
A3	HANSON SPANCRETE PAC	13131 LOS ANGELES ST	FINDS, ECHO		TP
A4	CLARK PACIFIC IRWIND	13131 LOS ANGELES ST	FINDS, ECHO		TP
A5	HANSON STRUCTURAL PR	13131 LOS ANGELES ST	SWEEPS UST, HIST UST, HAZNET, NPDES, WDS, WIP,...		TP
A6	HANSON STRUCTURAL PR	13131 LOS ANGELES ST	FINDS		TP
A7	HEIDELBERG CEMENT GR	13131 LOS ANGELES ST	LOS ANGELES CO. HMS		TP
A8	CLARK PACIFIC IRWIND	13131 LOS ANGELES ST	NPDES, CIWQS		TP
A9	SPANCRETE OF CALIF	13131 LOS ANGELES ST	HAZNET		TP
A10	UNITED READY MIXED C	13131 LOS ANGELES ST	LOS ANGELES CO. HMS		TP
A11	HANSON STRUCTURAL PR	13131 LOS ANGELES ST	HAZNET		TP
Reg	SAN GABRIEL VALLEY		AOCONCERN	Same	2837, 0.537, SE
Reg	SAN GABRIEL VALLEY (	SUNSET & SAN BERNARD	NPL, SEMS, US ENG CONTROLS, ROD, PRP	Same	3015, 0.571, SSE
12	MEDI/NUCLEAR CORP. I	4501 LITTLEJOHN ST	WIP	Lower	50, 0.009, SSE
B13	INDUSTRIAL ASPHALT/D	13130 LOS ANGELES	HIST CORTESE	Lower	110, 0.021, SSW
B14	INDUSTRIAL ASPHALT/D	13130 LOS ANGELES ST	LUST	Lower	110, 0.021, SSW
B15	INDUSTRIAL ASPHALT	13130 LOS ANGELES ST	SWEEPS UST, HIST UST, LOS ANGELES CO. HMS	Lower	110, 0.021, SSW
B16	INDUSTRIAL ASPHALT	13130 LOS ANGELES ST	HIST UST	Lower	110, 0.021, SSW
C17	BROOKS PRODUCTS INC/	4505 LITTLEJOHN	HIST UST	Lower	259, 0.049, ESE
C18	BROOKS PRODUCTS, INC	4505 LITTLE JOHN ST	SWEEPS UST, CA FID UST	Lower	259, 0.049, ESE
C19	PACK WEST	4505 LITTLE JOHN ST	WIP	Lower	259, 0.049, ESE
D20	SCE IRWINDALE AUTO S	13025 LOS ANGELES ST	HIST UST, LOS ANGELES CO. HMS	Lower	306, 0.058, SW
D21	SCE IRWINDALE AUTOMO	13025 E LOS ANGELES	AST, SWEEPS UST, HIST UST, LOS ANGELES CO. HMS,...	Lower	306, 0.058, SW
D22		13025 E LOS ANGELES	AST	Lower	306, 0.058, SW
D23	SCE - IRWINDALE CORP	13025 LOS ANGELES ST	UST	Lower	306, 0.058, SW
D24	SCE - IRWINDALE CORP	13025 LOS ANGELES ST	LUST, HIST UST, CHMIRS	Lower	306, 0.058, SW
D25	SOUTHERN CAL EDISON	13025 E. LOS ANGELES	RCRA-LQG	Lower	306, 0.058, SW
D26	SCE - IRWINDALE CORP	13025 LOS ANGELES ST	UST	Lower	306, 0.058, SW
E27	J-MARK COMPUTER	13111 BROOKS DR	WIP	Higher	342, 0.065, NNE
B28	CALMAT CO		US MINES	Lower	359, 0.068, SW
F29	BOB ZADINA TRUCKING	4600 RIVERGRADE RD	SWEEPS UST, HIST UST	Higher	375, 0.071, NNW
F30	BOB ZADINA TRUCKING	4600 RIVERGRADE RD	HIST UST, LOS ANGELES CO. HMS, CIWQS	Higher	375, 0.071, NNW
F31	BOB ZADIUM TRUCKING	4600 RIVERGRADE RD	UST	Higher	375, 0.071, NNW
C32	MAC DONALD CARBIDE C	4510 LITTLEJOHN ST	WIP	Lower	421, 0.080, ESE
C33	MACDONALD CARBIDE CO	4510 LITTLEJOHN STRE	RCRA-SQG, FINDS, ECHO, EMI	Lower	421, 0.080, ESE
E34	UNITED AIR CONDITION	13200 BROOKS DR	WIP	Higher	432, 0.082, NNE
G35	GIBRALTAR PRODUCTS,	4525 LITTLEJOHN ST	WIP	Higher	434, 0.082, ENE
E36	CONTROL OPTICS	13211 BROOKS DR	WIP	Higher	438, 0.083, NNE
37	H & L COMPANY	13263 LOS ANGELES ST	WIP	Lower	455, 0.086, SE

MAPPED SITES SUMMARY

Target Property Address:
13131 LOS ANGELES STREET
IRWINDALE, CA 91706

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
C38	UPM INC	13245 LOS ANGELES ST	RCRA-SQG, LUST, SWEEPS UST, HIST UST, CA FID UST,...	Lower	501, 0.095, ESE
C39	UNIVERSAL PLASTIC MO	13245 LOS ANGELES ST	LUST, EMI, WIP	Lower	501, 0.095, ESE
E40	QUIK STRAP INC.	13300 BROOKS DR	WIP	Higher	511, 0.097, NNE
E41	ASLAN COMPUTER CORP.	13300 BROOKS DR	WIP	Higher	511, 0.097, NNE
E42	WESTERN POWER SYSTEM	13311 BROOKS DR	WIP	Higher	522, 0.099, NNE
H43	AMS, INC.	4801 LITTLEJOHN ST	WIP	Higher	590, 0.112, NE
44	ERIC INDUSTRIES, INC	4530 LITTLEJOHN ST	WIP	Higher	693, 0.131, East
G45	MILLER GRAPHICS INC	4550 LITTLEJOHN ST	RCRA-SQG, FINDS, ECHO, EMI, HAZNET, WIP	Higher	702, 0.133, ENE
46	VIDEO TUTORS INSTITU	4610 LITTLEJOHN ST	WIP	Higher	705, 0.134, NE
H47	ADVANCED COLOR & CHE	4800 LITTLE JOHN ST	WIP	Higher	705, 0.134, NE
I48	HOME SAVINGS OF AMER	4900 RIVERGRADE RD	HIST UST, HAZNET	Higher	792, 0.150, NNE
I49	SAN GABRIEL VALLEY C	4900 RIVERGRADE ROAD	SWEEPS UST, HIST UST, EMI, NPDES, WIP, CIWQS	Higher	792, 0.150, NNE
I50	SAN GABRIEL VALLEY C	4900 RIVERGRADE RD.	UST	Higher	792, 0.150, NNE
I51	HOME SAVINGS OF AMER	4900 RIVERGRADE RD N	LUST, LOS ANGELES CO. HMS	Higher	792, 0.150, NNE
I52	SAN GABRIEL VALLEY C	4910 RIVERGRADE RD.	UST	Higher	853, 0.162, NNE
I53	SAN GABRIEL VALLEY C	4920 RIVERGRADE RD	UST	Higher	913, 0.173, NNE
I54	AGERE SYSTEMS	4920 N RIVERGRADE RD	LUST, LOS ANGELES CO. HMS	Higher	952, 0.180, NNE
I55	AGERE SYSTEMS/ LSI C	4920 RIVERGRADE ROAD	RCRA-CESQG	Higher	952, 0.180, NNE
J56	DURBIN LANDFILL	13000 LOS ANGELES ST	SWF/LF, CHMIRS, LDS, ENF, CIWQS	Lower	1262, 0.239, WSW
J57	DURBIN	13000 EAST LOS ANGEL	HIST UST, HAZNET	Lower	1262, 0.239, WSW
J58	CALMAT COMPANY	13000 LOS ANGELES ST	SWEEPS UST, EMI	Lower	1262, 0.239, WSW
J59	CALIFORNIA PORTLAND	13000 E LOS ANGELES	AST, EMI, LOS ANGELES CO. HMS	Lower	1262, 0.239, WSW
J60	INDUSTRIAL ASPHALT,	13000 LOS ANGELES ST	HIST UST, EMI, WDS	Lower	1262, 0.239, WSW
J61		13000 LOS ANGELES ST	AST	Lower	1262, 0.239, WSW
62	OLIVE AND CENTER YAR	4769 CENTER AVENUE	SWF/LF	Higher	1979, 0.375, NE
63	OSFA ENTERPRISES, IN	13623 LOS ANGELES ST	CPS-SLIC, WIP	Higher	2267, 0.429, ESE
64	SAN GABRIEL RIVER IM		ENVIROSTOR	Higher	4601, 0.871, NNE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
SPANCRETE OF CALIFOR 13131 LOS ANGELES ST IRWINDALE, CA 91706	LOS ANGELES CO. HMS Facility ID: 009315-020651 Facility ID: 009315-039989 Facility ID: 009315-041609 Facility ID: 009315-047866	N/A
SPANCRETE OF CALIFOR 13131 LOS ANGELES ST BALDWIN PARK, CA 91706	UST Database: UST, Date of Government Version: 03/12/2018 Facility Id: 20651	N/A
HANSON SPANCRETE PAC 13131 LOS ANGELES ST IRWINDALE, CA 91706	FINDS Registry ID:: 110031018609 ECHO Registry ID: 110031018609	N/A
CLARK PACIFIC IRWIND 13131 LOS ANGELES ST IRWINDALE, CA 91706	FINDS Registry ID:: 110070092601 ECHO Registry ID: 110070092601	N/A
HANSON STRUCTURAL PR 13131 LOS ANGELES ST IRWINDALE, CA 91706	SWEEPS UST Status: A Tank Status: A Comp Number: 9116 HIST UST Facility Id: 00000055837 HAZNET GEPAID: CAL000386795 NPDES WDS Facility Status: A Facility Id: 4 19I000771 WIP Facility Status: Historical CIWQS	N/A
HANSON STRUCTURAL PR 13131 LOS ANGELES ST IRWINDALE, CA 91706	FINDS Registry ID:: 110065914434	N/A
HEIDELBERG CEMENT GR 13131 LOS ANGELES ST IRWINDALE, CA 91706	LOS ANGELES CO. HMS	N/A

EXECUTIVE SUMMARY

	Facility ID: 009315-054475	
CLARK PACIFIC IRWIND 13131 LOS ANGELES ST IRWINDALE, CA 91706	NPDES Facility Status: Terminated CIWQS	N/A
SPANCRETE OF CALIF 13131 LOS ANGELES ST IRWINDALE, CA 91706	HAZNET GEPAID: CAL000003199	N/A
UNITED READY MIXED C 13131 LOS ANGELES ST IRWINDALE, CA 91706	LOS ANGELES CO. HMS Facility ID: 009315-009116 Facility ID: 009315-058175	N/A
HANSON STRUCTURAL PR 13131 LOS ANGELES ST IRWINDALE, CA 91706	HAZNET GEPAID: CAL000221108	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

Proposed NPL..... Proposed National Priority List Sites
NPL LIENS..... Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL..... National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY..... Federal Facility Site Information listing
SEMS..... Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE..... Superfund Enterprise Management System Archive

EXECUTIVE SUMMARY

Federal RCRA CORRACTS facilities list

CORRACTS..... Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF..... RCRA - Treatment, Storage and Disposal

Federal institutional controls / engineering controls registries

LUCIS..... Land Use Control Information System
US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROL..... Sites with Institutional Controls

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

RESPONSE..... State Response Sites

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Voluntary Cleanup Program Properties

State and tribal Brownfields sites

BROWNFIELDS..... Considered Brownfieds Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT..... Waste Management Unit Database
SWRCY..... Recycler Database
HAULERS..... Registered Waste Tire Haulers Listing
INDIAN ODI..... Report on the Status of Open Dumps on Indian Lands
ODI..... Open Dump Inventory

EXECUTIVE SUMMARY

DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS	Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL	Delisted National Clandestine Laboratory Register
HIST Cal-Sites	Historical Calsites Database
SCH	School Property Evaluation Program
CDL	Clandestine Drug Labs
Toxic Pits	Toxic Pits Cleanup Act Sites
US CDL	National Clandestine Laboratory Register
CERS HAZ WASTE	CERS HAZ WASTE

Local Lists of Registered Storage Tanks

CERS TANKS	California Environmental Reporting System (CERS) Tanks

Local Land Records

LIENS	Environmental Liens Listing
LIENS 2	CERCLA Lien Information
DEED	Deed Restriction Listing

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
CHMIRS	California Hazardous Material Incident Report System
LDS	Land Disposal Sites Listing
MCS	Military Cleanup Sites Listing
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database

EXECUTIVE SUMMARY

HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
ABANDONED MINES	Abandoned Mines
DOCKET HWC	Hazardous Waste Compliance Docket Listing
UXO	Unexploded Ordnance Sites
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
Cortese	"Cortese" Hazardous Waste & Substances Sites List
CUPA Listings	CUPA Resources List
DRYCLEANERS	Cleaner Facilities
EMI	Emissions Inventory Data
ENF	Enforcement Action Listing
Financial Assurance	Financial Assurance Information Listing
ICE	ICE
HWP	EnviroStor Permitted Facilities Listing
HWT	Registered Hazardous Waste Transporter Database
MINES	Mines Site Location Listing
MWMP	Medical Waste Management Program Listing
PEST LIC	Pesticide Regulation Licenses Listing
PROC	Certified Processors Database
Notify 65	Proposition 65 Records
LA Co. Site Mitigation	Site Mitigation List
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
MILITARY PRIV SITES	MILITARY PRIV SITES (GEOTRACKER)
PROJECT	PROJECT (GEOTRACKER)
CERS	CERS
WELL STIM PROJ	Well Stimulation Project (GEOTRACKER)
UIC GEO	UIC GEO (GEOTRACKER)
NON-CASE INFO	NON-CASE INFO (GEOTRACKER)
OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)
PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)
SAMPLING POINT	SAMPLING POINT (GEOTRACKER)

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner	EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST..... Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: Also known as Superfund, the National Priority List database is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA.

A review of the NPL list, as provided by EDR, and dated 05/13/2018 has revealed that there is 1 NPL site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SAN GABRIEL VALLEY (	***SUNSET & SAN BERNARD***	***SSE 1/2 - 1 (0.571 mi.)***	***0***	***24***

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SOUTHERN CAL EDISON	13025 E. LOS ANGELES	SW 0 - 1/8 (0.058 mi.)	D25	51

EXECUTIVE SUMMARY

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/01/2018 has revealed that there are 3 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MILLER GRAPHICS INC	***4550 LITTLEJOHN ST***	***ENE 1/8 - 1/4 (0.133 mi.)***	***G45***	***78***

Lower Elevation	Address	Direction / Distance	Map ID	Page
MACDONALD CARBIDE CO	***4510 LITTLEJOHN STRE***	***ESE 0 - 1/8 (0.080 mi.)***	***C33***	***61***
UPM INC	***13245 LOS ANGELES ST***	***ESE 0 - 1/8 (0.095 mi.)***	***C38***	***65***

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 03/01/2018 has revealed that there is 1 RCRA-CESQG site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AGERE SYSTEMS/ LSI C	4920 RIVERGRADE ROAD	NNE 1/8 - 1/4 (0.180 mi.)	I55	101

State- and tribal - equivalent CERCLIS

ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the ENVIROSTOR list, as provided by EDR, and dated 04/30/2018 has revealed that there is 1 ENVIROSTOR site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SAN GABRIEL RIVER IM Facility Id: 80000462 Status: Inactive - Needs Evaluation		NNE 1/2 - 1 (0.871 mi.)	64	133

EXECUTIVE SUMMARY

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the Integrated Waste Management Board's Solid Waste Information System (SWIS) database.

A review of the SWF/LF list, as provided by EDR, has revealed that there are 2 SWF/LF sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OLIVE AND CENTER YAR	4769 CENTER AVENUE	NE 1/4 - 1/2 (0.375 mi.)	62	131

Database: SWF/LF (SWIS), Date of Government Version: 05/14/2018
Facility ID: 19-AA-1056
Operational Status: Active
Regulation Status: Notification

Lower Elevation	Address	Direction / Distance	Map ID	Page
DURBIN LANDFILL	***13000 LOS ANGELES ST***	***WSW 1/8 - 1/4 (0.239 mi.)***	***J56***	***106***

Database: LOS ANGELES CO. LF, Date of Government Version: 04/16/2018
Database: SWF/LF (SWIS), Date of Government Version: 05/14/2018
Facility ID: 19-AA-1111
Site ID: 1804
Status: Active
Operational Status: Active
Regulation Status: Notification

State and tribal leaking storage tank lists

LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the LUST list, as provided by EDR, has revealed that there are 6 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
HOME SAVINGS OF AMER	***4900 RIVERGRADE RD N***	***NNE 1/8 - 1/4 (0.150 mi.)***	***I51***	***95***

Database: LUST, Date of Government Version: 03/12/2018
Status: Completed - Case Closed
Global Id: T10000000547

AGERE SYSTEMS	***4920 N RIVERGRADE RD***	***NNE 1/8 - 1/4 (0.180 mi.)***	***I54***	***99***

Database: LUST, Date of Government Version: 03/12/2018
Status: Completed - Case Closed
Global Id: SL0603749444

Lower Elevation	Address	Direction / Distance	Map ID	Page
INDUSTRIAL ASPHALT/D	13130 LOS ANGELES ST	SSW 0 - 1/8 (0.021 mi.)	B14	37

Database: LUST REG 4, Date of Government Version: 09/07/2004
Database: LUST, Date of Government Version: 03/12/2018

Status: Completed - Case Closed
Facility Id: I-12403
Status: Case Closed
Global Id: T0603703968
Global ID: T0603703968

SCE - IRWINDALE CORP ***13025 LOS ANGELES ST*** ***SW 0 - 1/8 (0.058 mi.)*** ***D24*** ***47***
Database: LUST, Date of Government Version: 03/12/2018
Status: Completed - Case Closed
Global Id: T10000000525

UPM INC ***13245 LOS ANGELES ST*** ***ESE 0 - 1/8 (0.095 mi.)*** ***C38*** ***65***
Database: LUST, Date of Government Version: 03/12/2018
Status: Completed - Case Closed
Global Id: T0603703773

UNIVERSAL PLASTIC MO ***13245 LOS ANGELES ST*** ***ESE 0 - 1/8 (0.095 mi.)*** ***C39*** ***75***
Database: LUST REG 4, Date of Government Version: 09/07/2004
Facility Id: I-11267
Status: Case Closed
Global ID: T0603703773

CPS-SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CPS-SLIC list, as provided by EDR, has revealed that there is 1 CPS-SLIC site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OSFA ENTERPRISES, IN	***13623 LOS ANGELES ST***	***ESE 1/4 - 1/2 (0.429 mi.)***	***63***	***132***

Database: CPS-SLIC, Date of Government Version: 03/12/2018
Global Id: SL603798913
Facility Status: Open - Inactive

State and tribal registered storage tank lists

UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the State Water Resources Control Board's Hazardous Substance Storage Container Database.

A review of the UST list, as provided by EDR, has revealed that there are 6 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BOB ZADIUM TRUCKING	4600 RIVERGRADE RD	NNW 0 - 1/8 (0.071 mi.)	F31	61

Database: UST, Date of Government Version: 03/12/2018
Facility Id: 10911

SAN GABRIEL VALLEY C	4900 RIVERGRADE RD.	NNE 1/8 - 1/4 (0.150 mi.)	I50	95

Database: UST, Date of Government Version: 03/12/2018

Facility Id: 7564 Facility Id: LACoFA0022032				
SAN GABRIEL VALLEY C Database: UST, Date of Government Version: 03/12/2018 Facility Id: LACoFA0031623	4910 RIVERGRADE RD.	NNE 1/8 - 1/4 (0.162 mi.)	I52	98
SAN GABRIEL VALLEY C Database: UST, Date of Government Version: 03/12/2018 Facility Id: LACoFA0032229	4920 RIVERGRADE RD	NNE 1/8 - 1/4 (0.173 mi.)	I53	99

Lower Elevation	Address	Direction / Distance	Map ID	Page
SCE - IRWINDALE CORP Database: UST, Date of Government Version: 03/12/2018 Facility Id: 837	13025 LOS ANGELES ST	SW 0 - 1/8 (0.058 mi.)	D23	47
SCE - IRWINDALE CORP Database: UST CLOSURE, Date of Government Version: 03/08/2018	13025 LOS ANGELES ST	SW 0 - 1/8 (0.058 mi.)	D26	52

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, has revealed that there are 4 AST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SCE IRWINDALE AUTOMO Database: AST, Date of Government Version: 07/06/2016	***13025 E LOS ANGELES***	***SW 0 - 1/8 (0.058 mi.)***	***D21***	***44***
Not reported Database: AST, Date of Government Version: 07/06/2016	13025 E LOS ANGELES	SW 0 - 1/8 (0.058 mi.)	D22	47
CALIFORNIA PORTLAND Database: AST, Date of Government Version: 07/06/2016	***13000 E LOS ANGELES***	***WSW 1/8 - 1/4 (0.239 mi.)***	***J59***	***126***
Not reported Database: AST, Date of Government Version: 07/06/2016	13000 LOS ANGELES ST	WSW 1/8 - 1/4 (0.239 mi.)	J61	131

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Hazardous waste / Contaminated Sites

AOCONCERN: San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

A review of the AOCONCERN list, as provided by EDR, and dated 03/30/2009 has revealed that there is 1 AOCONCERN site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SAN GABRIEL VALLEY		SE 1/2 - 1 (0.537 mi.)	0	23

Local Lists of Registered Storage Tanks

SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 7 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BOB ZADINA TRUCKING Status: A Tank Status: A Comp Number: 10911	***4600 RIVERGRADE RD***	***NNW 0 - 1/8 (0.071 mi.)***	***F29***	***59***
SAN GABRIEL VALLEY C Status: A Tank Status: A Comp Number: 7564	***4900 RIVERGRADE ROAD***	***NNE 1/8 - 1/4 (0.150 mi.)***	***I49***	***86***

Lower Elevation	Address	Direction / Distance	Map ID	Page
INDUSTRIAL ASPHALT Status: A Tank Status: A Comp Number: 12403	***13130 LOS ANGELES ST***	***SSW 0 - 1/8 (0.021 mi.)***	***B15***	***39***
BROOKS PRODUCTS, INC Status: A Comp Number: 9231	***4505 LITTLE JOHN ST***	***ESE 0 - 1/8 (0.049 mi.)***	***C18***	***42***
SCE IRWINDALE AUTOMO Status: A Tank Status: A Comp Number: 837	***13025 E LOS ANGELES***	***SW 0 - 1/8 (0.058 mi.)***	***D21***	***44***
UPM INC Comp Number: 11267	***13245 LOS ANGELES ST***	***ESE 0 - 1/8 (0.095 mi.)***	***C38***	***65***
CALMAT COMPANY Status: A Tank Status: A Comp Number: 378	***13000 LOS ANGELES ST***	***WSW 1/8 - 1/4 (0.239 mi.)***	***J58***	***121***

HIST UST: Historical UST Registered Database.

A review of the HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 13 HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BOB ZADINA TRUCKING Facility Id: 00000007857	***4600 RIVERGRADE RD***	***NNW 0 - 1/8 (0.071 mi.)***	***F29***	***59***
BOB ZADINA TRUCKING	***4600 RIVERGRADE RD***	***NNW 0 - 1/8 (0.071 mi.)***	***F30***	***60***
HOME SAVINGS OF AMER	***4900 RIVERGRADE RD***	***NNE 1/8 - 1/4 (0.150 mi.)***	***I48***	***84***
SAN GABRIEL VALLEY C	***4900 RIVERGRADE ROAD***	***NNE 1/8 - 1/4 (0.150 mi.)***	***I49***	***86***

Facility Id: 00000041578
Facility Id: 00000061046

Lower Elevation	Address	Direction / Distance	Map ID	Page
INDUSTRIAL ASPHALT	***13130 LOS ANGELES ST***	***SSW 0 - 1/8 (0.021 mi.)***	***B15***	***39***
INDUSTRIAL ASPHALT Facility Id: 00000000509	13130 LOS ANGELES ST	SSW 0 - 1/8 (0.021 mi.)	B16	41
BROOKS PRODUCTS INC/ Facility Id: 00000003696	4505 LITTLEJOHN	ESE 0 - 1/8 (0.049 mi.)	C17	41
SCE IRWINDALE AUTO S Facility Id: 00000022212	***13025 LOS ANGELES ST***	***SW 0 - 1/8 (0.058 mi.)***	***D20***	***43***
SCE IRWINDALE AUTOMO	***13025 E LOS ANGELES***	***SW 0 - 1/8 (0.058 mi.)***	***D21***	***44***
SCE - IRWINDALE CORP Facility Id: 00000022211	***13025 LOS ANGELES ST***	***SW 0 - 1/8 (0.058 mi.)***	***D24***	***47***
UPM INC Facility Id: 00000047431	***13245 LOS ANGELES ST***	***ESE 0 - 1/8 (0.095 mi.)***	***C38***	***65***
DURBIN	***13000 EAST LOS ANGEL***	***WSW 1/8 - 1/4 (0.239 mi.)***	***J57***	***119***
INDUSTRIAL ASPHALT, Facility Id: 00000004818	***13000 LOS ANGELES ST***	***WSW 1/8 - 1/4 (0.239 mi.)***	***J60***	***129***

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 2 CA FID UST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BROOKS PRODUCTS, INC Facility Id: 19004489 Status: A	***4505 LITTLE JOHN ST***	***ESE 0 - 1/8 (0.049 mi.)***	***C18***	***42***
UPM INC Facility Id: 19002323 Status: I	***13245 LOS ANGELES ST***	***ESE 0 - 1/8 (0.095 mi.)***	***C38***	***65***

Other Ascertainable Records

ROD: Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid the cleanup.

A review of the ROD list, as provided by EDR, and dated 05/13/2018 has revealed that there is 1 ROD site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SAN GABRIEL VALLEY (	***SUNSET & SAN BERNARD***	***SSE 1/2 - 1 (0.571 mi.)***	***0***	***24***

EXECUTIVE SUMMARY

US MINES: Mines Master Index File. The source of this database is the Dept. of Labor, Mine Safety and Health Administration.

A review of the US MINES list, as provided by EDR, has revealed that there is 1 US MINES site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CALMAT CO Database: US MINES, Date of Government Version: 05/03/2018		SW 0 - 1/8 (0.068 mi.)	B28	53

HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 2 HIST CORTESE sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
INDUSTRIAL ASPHALT/D Reg Id: I-12403	13130 LOS ANGELES	SSW 0 - 1/8 (0.021 mi.)	B13	37
UPM INC Reg Id: I-11267	***13245 LOS ANGELES ST***	***ESE 0 - 1/8 (0.095 mi.)***	***C38***	***65***

WIP: Well Investigation Program case in the San Gabriel and San Fernando Valley area.

A review of the WIP list, as provided by EDR, and dated 07/03/2009 has revealed that there are 19 WIP sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
J-MARK COMPUTER Facility Status: Historical	13111 BROOKS DR	NNE 0 - 1/8 (0.065 mi.)	E27	52
UNITED AIR CONDITION Facility Status: Historical	13200 BROOKS DR	NNE 0 - 1/8 (0.082 mi.)	E34	64
GIBRALTAR PRODUCTS, Facility Status: Historical	4525 LITTLEJOHN ST	ENE 0 - 1/8 (0.082 mi.)	G35	64
CONTROL OPTICS Facility Status: Historical	13211 BROOKS DR	NNE 0 - 1/8 (0.083 mi.)	E36	64
QUIK STRAP INC.	13300 BROOKS DR	NNE 0 - 1/8 (0.097 mi.)	E40	76
ASLAN COMPUTER CORP. Facility Status: Historical	13300 BROOKS DR	NNE 0 - 1/8 (0.097 mi.)	E41	77
WESTERN POWER SYSTEM Facility Status: Historical	13311 BROOKS DR	NNE 0 - 1/8 (0.099 mi.)	E42	77
AMS, INC. Facility Status: Historical	4801 LITTLEJOHN ST	NE 0 - 1/8 (0.112 mi.)	H43	77
ERIC INDUSTRIES, INC Facility Status: Historical	4530 LITTLEJOHN ST	E 1/8 - 1/4 (0.131 mi.)	44	77
MILLER GRAPHICS INC Facility Status: Historical	***4550 LITTLEJOHN ST***	***ENE 1/8 - 1/4 (0.133 mi.)***	***G45***	***78***
VIDEO TUTORS INSTITU	4610 LITTLEJOHN ST	NE 1/8 - 1/4 (0.134 mi.)	46	83

Facility Status: Historical				
ADVANCED COLOR & CHE Facility Status: Historical	4800 LITTLE JOHN ST	NE 1/8 - 1/4 (0.134 mi.)	H47	84
SAN GABRIEL VALLEY C Facility Status: Historical	***4900 RIVERGRADE ROAD***	***NNE 1/8 - 1/4 (0.150 mi.)***	***I49***	***86***

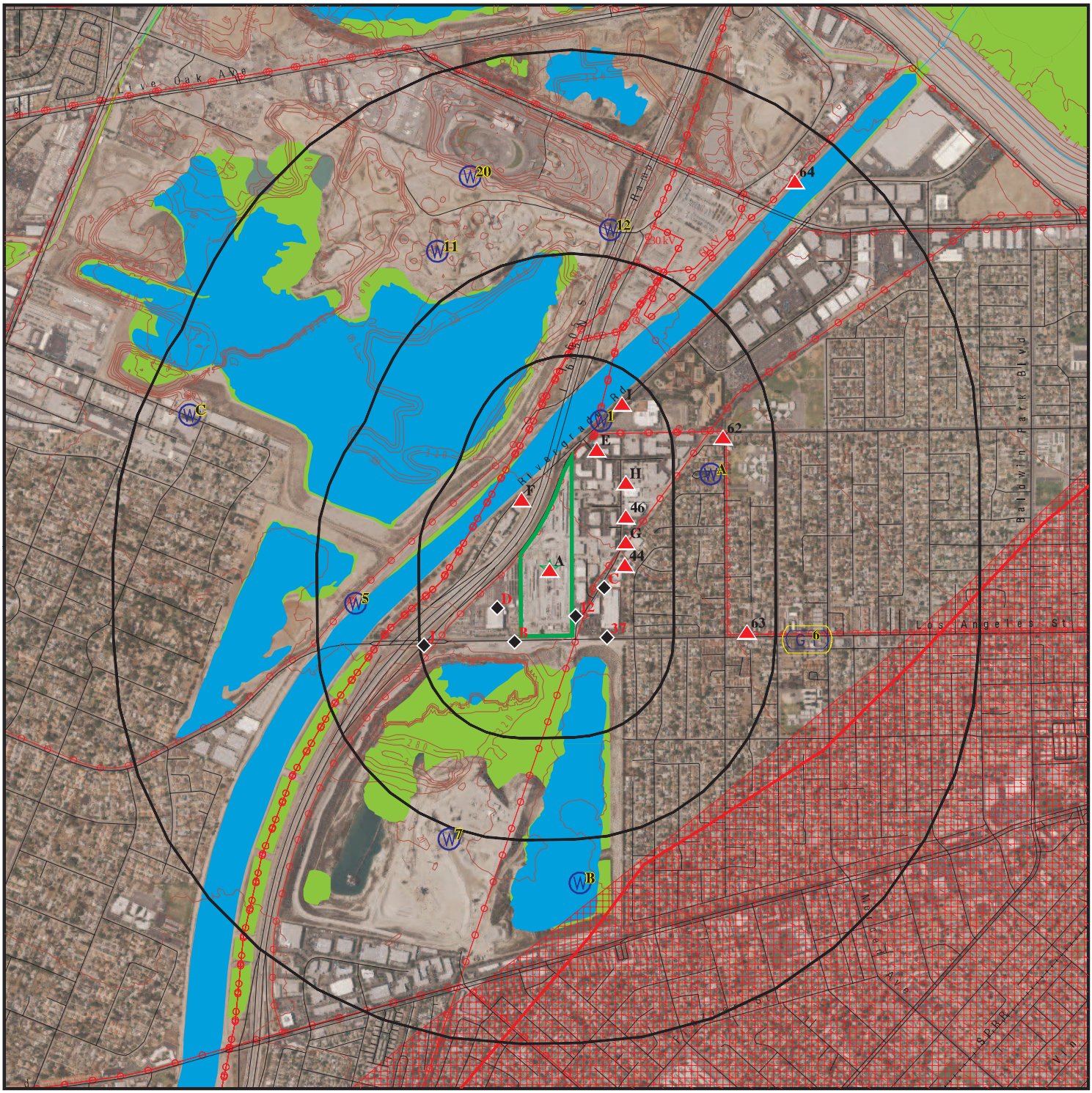
Lower Elevation	Address	Direction / Distance	Map ID	Page
MEDI/NUCLEAR CORP. I Facility Status: Historical	4501 LITTLEJOHN ST	SSE 0 - 1/8 (0.009 mi.)	12	37
PACK WEST Facility Status: Historical	4505 LITTLE JOHN ST	ESE 0 - 1/8 (0.049 mi.)	C19	43
SCE IRWINDALE AUTOMO Facility Status: Historical	***13025 E LOS ANGELES***	***SW 0 - 1/8 (0.058 mi.)***	***D21***	***44***
MAC DONALD CARBIDE C Facility Status: Historical	4510 LITTLEJOHN ST	ESE 0 - 1/8 (0.080 mi.)	C32	61
H & L COMPANY	13263 LOS ANGELES ST	SE 0 - 1/8 (0.086 mi.)	37	65
UNIVERSAL PLASTIC MO Facility Status: Historical	***13245 LOS ANGELES ST***	***ESE 0 - 1/8 (0.095 mi.)***	***C39***	***75***

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 1 records.

Site Name	Database(s)
LOS ANGELES CO SANITATION DISTRICT	HAZNET

OVERVIEW MAP - 5351994.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Upgradient Area

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	13131 Los Angeles Street	CLIENT:	Leymaster Env. Consulting
ADDRESS:	13131 Los Angeles Street Irwindale CA 91706	CONTACT:	Travis Knight
		INQUIRY #:	5351994.2s
LAT/LONG:	34.094488 / 117.985502	DATE:	July 03, 2018 3:01 pm

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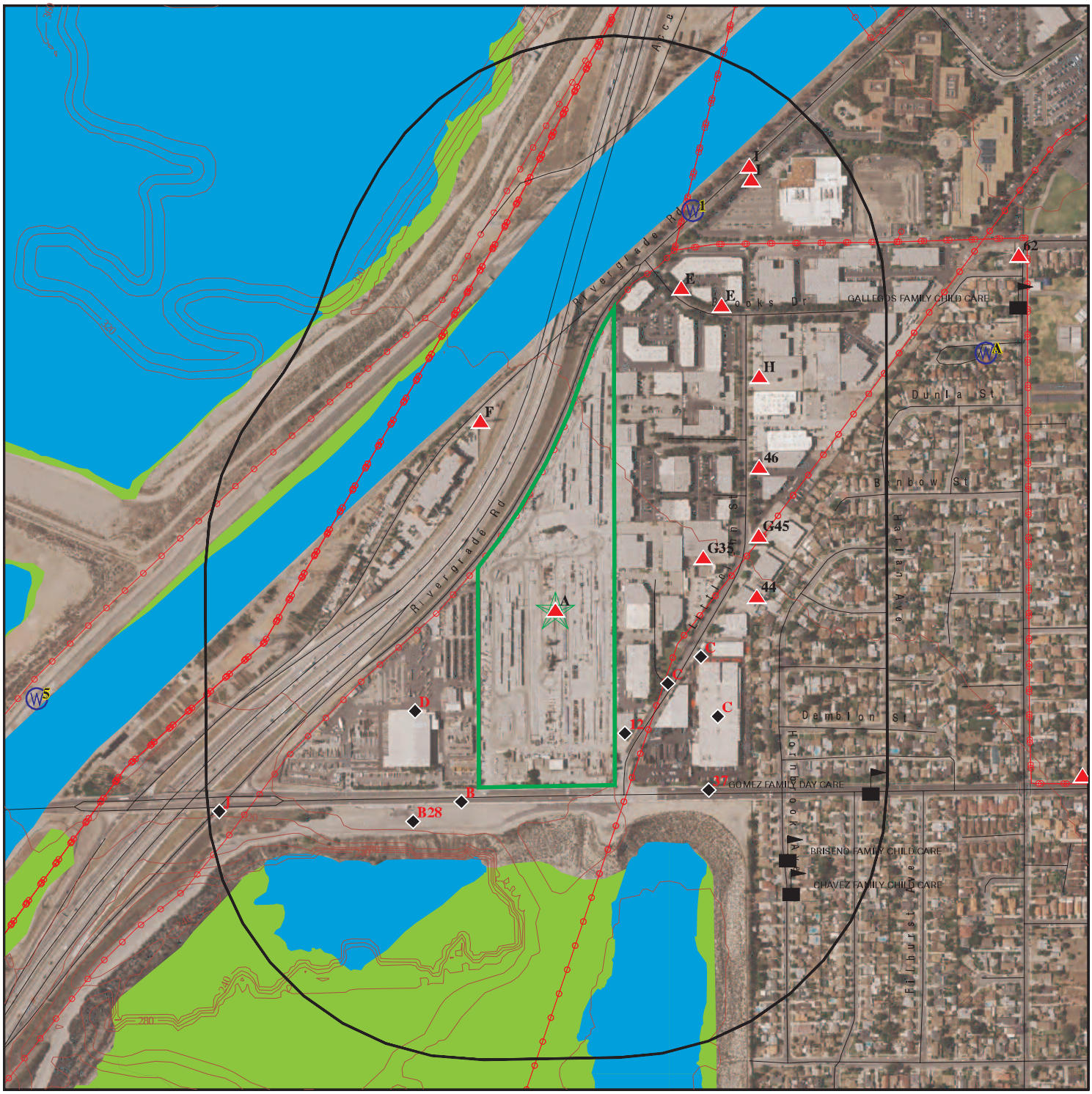
DETAIL MAP - 5351994.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/8 1/4 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	13131 Los Angeles Street	CLIENT:	Leymaster Env. Consulting
ADDRESS:	13131 Los Angeles Street Irwindale CA 91706	CONTACT:	Travis Knight
		INQUIRY #:	5351994.2s
LAT/LONG:	34.094488 / 117.985502	DATE:	July 03, 2018 3:05 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	1	NR	1
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		1	0	NR	NR	NR	1
RCRA-SQG	0.250		2	1	NR	NR	NR	3
RCRA-CESQG	0.250		0	1	NR	NR	NR	1
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
ENVIROSTOR	1.000		0	0	0	1	NR	1
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	1	1	NR	NR	2
State and tribal leaking storage tank lists								
LUST	0.500		4	2	0	NR	NR	6

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CPS-SLIC	0.500		0	0	1	NR	NR	1
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250	1	3	3	NR	NR	NR	7
AST	0.250		2	2	NR	NR	NR	4
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
WMUDS/SWAT	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
AOCONCERN	1.000		0	0	0	1	NR	1
US HIST CDL	0.001		0	NR	NR	NR	NR	0
HIST Cal-Sites	1.000		0	0	0	0	NR	0
SCH	0.250		0	0	NR	NR	NR	0
CDL	0.001		0	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
CERS HAZ WASTE	0.250		0	0	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250	1	5	2	NR	NR	NR	8
HIST UST	0.250	1	9	4	NR	NR	NR	14
CA FID UST	0.250		2	0	NR	NR	NR	2
CERS TANKS	0.250		0	0	NR	NR	NR	0
Local Land Records								
LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
CHMIRS	0.001		0	NR	NR	NR	NR	0
LDS	0.001		0	NR	NR	NR	NR	0
MCS	0.001		0	NR	NR	NR	NR	0
SPILLS 90	0.001		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	1	NR	1
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		1	0	NR	NR	NR	1
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001	3	0	NR	NR	NR	NR	3
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001	2	0	NR	NR	NR	NR	2
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
Cortese	0.500		0	0	0	NR	NR	0
CUPA Listings	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	0.001		0	NR	NR	NR	NR	0
ENF	0.001		0	NR	NR	NR	NR	0
Financial Assurance	0.001		0	NR	NR	NR	NR	0
HAZNET	0.001	3	0	NR	NR	NR	NR	3
ICE	0.001		0	NR	NR	NR	NR	0
HIST CORTESE	0.500		2	0	0	NR	NR	2
LOS ANGELES CO. HMS	0.001	3	0	NR	NR	NR	NR	3
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	0.001		0	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	0.001	2	0	NR	NR	NR	NR	2
PEST LIC	0.001		0	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		0	0	0	0	NR	0
LA Co. Site Mitigation	0.001		0	NR	NR	NR	NR	0
UIC	0.001		0	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	0.001	1	0	NR	NR	NR	NR	1
WIP	0.250	1	14	5	NR	NR	NR	20
MILITARY PRIV SITES	0.001		0	NR	NR	NR	NR	0
PROJECT	0.001		0	NR	NR	NR	NR	0
CERS	0.001		0	NR	NR	NR	NR	0
CIWQS	0.001	2	0	NR	NR	NR	NR	2
WELL STIM PROJ	0.001		0	NR	NR	NR	NR	0
UIC GEO	0.001		0	NR	NR	NR	NR	0
NON-CASE INFO	0.001		0	NR	NR	NR	NR	0
OTHER OIL GAS	0.001		0	NR	NR	NR	NR	0
PROD WATER PONDS	0.001		0	NR	NR	NR	NR	0
SAMPLING POINT	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	0.001		0	NR	NR	NR	NR	0
RGA LUST	0.001		0	NR	NR	NR	NR	0
- Totals --		20	45	21	2	4	0	92

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 Target Property | **SPANCRETE OF CALIFORNIA**
13131 LOS ANGELES ST
IRWINDALE, CA 91706 | **LOS ANGELES CO. HMS** | **S105422031**
N/A

Site 1 of 11 in cluster A

Actual: 355 ft.

LOS ANGELES CO. HMS:

Region:	LA
Permit Category:	T
Facility Id:	009315-020651
Facility Type:	0
Facility Status:	Closed
Area:	3S
Permit Number:	000058497
Permit Status:	Closed

Region:	LA
Permit Category:	I
Facility Id:	009315-020651
Facility Type:	09
Facility Status:	Closed
Area:	3S
Permit Number:	000109435
Permit Status:	Closed

Region:	LA
Permit Category:	T
Facility Id:	009315-039989
Facility Type:	0
Facility Status:	Removed
Area:	3S
Permit Number:	000380398
Permit Status:	Removed

Region:	LA
Permit Category:	I
Facility Id:	009315-041609
Facility Type:	09
Facility Status:	Closed
Area:	3S
Permit Number:	000415981
Permit Status:	Closed

Region:	LA
Permit Category:	S
Facility Id:	009315-047866
Facility Type:	S6
Facility Status:	Closed
Area:	3S
Permit Number:	CGI000771
Permit Status:	Closed

A2 Target Property | **SPANCRETE OF CALIFORNIA** | **UST** | **U004049266**
13131 LOS ANGELES ST | **N/A**
BALDWIN PARK, CA 91706

Site 2 of 11 in cluster A

Actual: 355 ft.

UST:

Facility ID:	20651
Permitting Agency:	LOS ANGELES COUNTY
Latitude:	34.095836
Longitude:	-117.984153

A3 Target Property | **HANSON SPANCRETE PACIFIC INC. - IRWINDALE** | **FINDS ECHO** | **1010374010**
13131 LOS ANGELES ST | **N/A**
IRWINDALE, CA 91706

Site 3 of 11 in cluster A

Actual: 355 ft.

FINDS:

Registry ID: 110031018609

Environmental Interest/Information System
US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1010374010
Registry ID:	110031018609
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110031018609

A4 Target Property | **CLARK PACIFIC IRWINDALE** | **FINDS ECHO** | **1023695531**
13131 LOS ANGELES STREET | **N/A**
IRWINDALE, CA 91706

Site 4 of 11 in cluster A

Actual: 355 ft.

FINDS:

Registry ID: 110070092601

Environmental Interest/Information System
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

CLARK PACIFIC IRWINDALE (Continued) **1023695531**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1023695531
Registry ID:	110070092601
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110070092601

A5 Target Property | **HANSON STRUCTURAL PRECAST INC** | **SWEEPS UST** | **U001568832**
13131 LOS ANGELES ST | **HIST UST** | **N/A**
IRWINDALE, CA 91706 | **HAZNET**
NPDES
Site 5 of 11 in cluster A | **WDS**
WIP
Actual: 355 ft. | **CIWQS**

SWEEPS UST:

Status:	Active
Comp Number:	9116
Number:	9
Board Of Equalization:	Not reported
Referral Date:	06-30-89
Action Date:	Not reported
Created Date:	06-30-89
Owner Tank Id:	Not reported
SWRCB Tank Id:	19-000-009116-000001
Tank Status:	A
Capacity:	Not reported
Active Date:	06-30-89
Tank Use:	UNKNOWN
STG:	W
Content:	Not reported
Number Of Tanks:	1

HIST UST:

File Number:	00028415
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00028415.pdf
Region:	STATE
Facility ID:	00000055837
Facility Type:	Other
Other Type:	PRECAST CONCRETE
Contact Name:	DWIGHT EDWARDS
Telephone:	8189628751
Owner Name:	UNITED READY MIXED CONCRETE CO
Owner Address:	4988 FIRESTONE BLVD.
Owner City,St,Zip:	SOUTH GATE, CA 90280
Total Tanks:	0002
Tank Num:	001
Container Num:	1
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	3/16
Leak Detection:	Visual

HANSON STRUCTURAL PRECAST INC (Continued) **U001568832**

Tank Num:	002
Container Num:	2
Year Installed:	1967
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	3/16
Leak Detection:	Visual

Click here for Geo Tracker PDF:

HAZNET:

envid:	U001568832
Year:	2016
GEPAID:	CAL000386795
Contact:	RICHARD MADDUX
Telephone:	7078491115
Mailing Name:	Not reported
Mailing Address:	40600 COUNTY ROAD 18 C
Mailing City,St,Zip:	WOODLAND, CA 95776
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.4
Cat Decode:	Other organic solids
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Los Angeles

envid:	U001568832
Year:	2015
GEPAID:	CAL000386795
Contact:	LUCIA NICHOLS
Telephone:	5302205397
Mailing Name:	Not reported
Mailing Address:	40600 COUNTY ROAD 18 C
Mailing City,St,Zip:	WOODLAND, CA 95776
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.45
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	U001568832
Year:	2014
GEPAID:	CAL000386795
Contact:	LUCIA NICHOLS
Telephone:	5302205397
Mailing Name:	Not reported

HANSON STRUCTURAL PRECAST INC (Continued) **U001568832**

Mailing Address:	1980 S RIVER RD
Mailing City,St,Zip:	WEST SACRAMENTO, CA 95691
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Not reported
Tons:	0.1
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	U001568832
Year:	2014
GEPAID:	CAL000386795
Contact:	LUCIA NICHOLS
Telephone:	5302205397
Mailing Name:	Not reported
Mailing Address:	1980 S RIVER RD
Mailing City,St,Zip:	WEST SACRAMENTO, CA 95691
Gen County:	Los Angeles
TSD EPA ID:	CAT080025711
TSD County:	San Bernardino
Waste Category:	Waste oil and mixed oil
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.456
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	U001568832
Year:	2014
GEPAID:	CAL000386795
Contact:	LUCIA NICHOLS
Telephone:	5302205397
Mailing Name:	Not reported
Mailing Address:	1980 S RIVER RD
Mailing City,St,Zip:	WEST SACRAMENTO, CA 95691
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	1.375
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

NPDES:

Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported

HANSON STRUCTURAL PRECAST INC (Continued) **U001568832**

Region:	4
Regulatory Measure Id:	188685
Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	4 19I000771
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	05/30/2013
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	05/09/2008
PROCESSED DATE:	03/20/1992
STATUS CODE NAME:	Terminated
STATUS DATE:	07/11/2013
PLACE SIZE:	25
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Ken Jarman
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	626-962-8751
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	ken.jarman@hanson.com
OPERATOR NAME:	Hanson Structural Precast Inc
OPERATOR ADDRESS:	13131 Los Angeles St
OPERATOR CITY:	Irwindale
OPERATOR STATE:	California
OPERATOR ZIP:	91706
OPERATOR CONTACT NAME:	Gilbert Torres
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	626-962-8751
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	gilbert.torres@hanson.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	California
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	626-962-8751
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported

HANSON STRUCTURAL PRECAST INC (Continued) **U001568832**

CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	San Gabriel River
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	3272-Concrete Products, Except Block and Brick
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

WDS:

Facility ID:	4 19I000771
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	6269628751
Facility Contact:	WOPSCHALL ED
Agency Name:	SPANCRETE CA
Agency Address:	13131 Los Angeles St
Agency City,St,Zip:	Irwindale 917062296
Agency Contact:	EDWARDS WAYNE
Agency Telephone:	6194239039
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as

HANSON STRUCTURAL PRECAST INC (Continued) **U001568832**

cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

WIP:

Region:	4
File Number:	108.1712
File Status:	**Historical**
Staff:	UNIDENTIFIED
Facility Suite:	Not reported

CIWQS:

Agency:	Hanson Structural Precast Inc
Agency Address:	13131 Los Angeles St, Irwindale, CA 91706
Place/Project Type:	Industrial - Concrete Products, Except Block and Brick
SIC/NAICS:	3272
Region:	4
Program:	INDSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	4 19I000771
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	03/20/1992
Termination Date:	05/30/2013
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.09199
Longitude:	-117.98647

A6 Target Property **HANSON STRUCTURAL PRECIAST** **FINDS** **1023299465**
13131 LOS ANGELES ST **N/A**
IRWINDALE, CA 91706

Site 6 of 11 in cluster A

Actual: 355 ft.

FINDS:

Registry ID: 110065914434

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A7 Target Property | **HEIDELBERG CEMENT GROUP**
13131 LOS ANGELES ST
IRWINDALE, CA 91706 | **LOS ANGELES CO. HMS** | **S110745035**
N/A

Site 7 of 11 in cluster A

Actual: 355 ft.

LOS ANGELES CO. HMS:

Region:	LA
Permit Category:	I
Facility Id:	009315-054475
Facility Type:	09
Facility Status:	Closed
Area:	3S
Permit Number:	000652462
Permit Status:	Closed

A8 Target Property | **CLARK PACIFIC IRWINDALE**
13131 LOS ANGELES STREET
IRWINDALE, CA 91706 | **NPDES CIWQS** | **S119084540**
N/A

Site 8 of 11 in cluster A

Actual: 355 ft.

NPDES:

Npdes Number:	CAS000001
Facility Status:	Terminated
Agency Id:	0
Region:	4
Regulatory Measure Id:	438674
Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19I024305
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	06/14/2013
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	08/07/2017
Discharge Name:	Clark Pacific
Discharge Address:	13131 Los Angeles Street
Discharge City:	Irwindale
Discharge State:	California
Discharge Zip:	91706
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported

CLARK PACIFIC IRWINDALE (Continued) **S119084540**

OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	4
Regulatory Measure Id:	438674
Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	4 19I024305
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported

CLARK PACIFIC IRWINDALE (Continued) **S119084540**

Discharge Zip:	Not reported
RECEIVED DATE:	06/14/2013
PROCESSED DATE:	06/14/2013
STATUS CODE NAME:	Active
STATUS DATE:	06/14/2013
PLACE SIZE:	25
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Richard Maddux
FACILITY CONTACT TITLE:	Senior Environmental specialist
FACILITY CONTACT PHONE:	707-849-1115
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	rmaddux@clarkpacific.com
OPERATOR NAME:	Clark Pacific
OPERATOR ADDRESS:	13131 Los Angeles Street
OPERATOR CITY:	Irwindale
OPERATOR STATE:	California
OPERATOR ZIP:	91706
OPERATOR CONTACT NAME:	Audra Owens
OPERATOR CONTACT TITLE:	EHS Director
OPERATOR CONTACT PHONE:	916-371-0305
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	aowens@clarkpacific.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	California
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	626-221-7265
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	San Gabriel River
CERTIFIER NAME:	Robert Clark
CERTIFIER TITLE:	EHS Director
CERTIFICATION DATE:	24-MAY-16
PRIMARY SIC:	3272-Concrete Products, Except Block and Brick
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

CLARK PACIFIC IRWINDALE (Continued) **S119084540**

CIWQS:

Agency:	Clark Pacific
Agency Address:	13131 Los Angeles Street, Irwindale, CA 91706
Place/Project Type:	Industrial - Concrete Products, Except Block and Brick
SIC/NAICS:	3272
Region:	4
Program:	INDSTW
Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	4 19I024305
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	06/14/2013
Termination Date:	08/07/2017
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.09449
Longitude:	-117.9855

A9 Target Property **SPANCRETE OF CALIF** **HAZNET** **S113022781**
13131 LOS ANGELES ST **N/A**
IRWINDALE, CA 91706

Site 9 of 11 in cluster A

Actual: 355 ft.

HAZNET:

envid:	S113022781
Year:	2000
GEPAID:	CAL000003199
Contact:	D EDWARDS VP PRODUCTION
Telephone:	6269628751
Mailing Name:	Not reported
Mailing Address:	13131 LOS ANGELES ST
Mailing City,St,Zip:	IRWINDALE, CA 917062242
Gen County:	Not reported
TSD EPA ID:	CAD982444481
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Transfer Station
Tons:	0.15
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	S113022781
Year:	2000
GEPAID:	CAL000003199
Contact:	D EDWARDS VP PRODUCTION
Telephone:	6269628751
Mailing Name:	Not reported
Mailing Address:	13131 LOS ANGELES ST

SPANCRETE OF CALIF (Continued) **S113022781**

Mailing City,St,Zip: IRWINDALE, CA 917062242
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Recycler
Tons: 0.67
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: S113022781
Year: 1999
GEPAID: CAL000003199
Contact: SPANCRETE OF CALIF INC
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 13131 LOS ANGELES ST
Mailing City,St,Zip: IRWINDALE, CA 917062242
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: .2500
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: S113022781
Year: 1999
GEPAID: CAL000003199
Contact: SPANCRETE OF CALIF INC
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 13131 LOS ANGELES ST
Mailing City,St,Zip: IRWINDALE, CA 917062242
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Recycler
Tons: .3275
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: S113022781
Year: 1998
GEPAID: CAL000003199
Contact: SPANCRETE OF CALIF INC
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 13131 LOS ANGELES ST
Mailing City,St,Zip: IRWINDALE, CA 917062242
Gen County: Not reported
TSD EPA ID: Not reported

SPANCRETE OF CALIF (Continued) **S113022781**

TSD County: Not reported
Waste Category: Unspecified oil-containing waste
Disposal Method: Transfer Station
Tons: .4000
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

A10
Target Property

UNITED READY MIXED CONCRETE
13131 LOS ANGELES ST
IRWINDALE, CA 91706

LOS ANGELES CO. HMS **S105422030**
N/A

Site 10 of 11 in cluster A

Actual: 355 ft.

LOS ANGELES CO. HMS:
Region: LA
Permit Category: T
Facility Id: 009315-009116
Facility Type: 0
Facility Status: Closed
Area: 3S
Permit Number: 00000087T
Permit Status: Closed

Region: LA
Permit Category: I
Facility Id: 009315-058175
Facility Type: 01
Facility Status: Closed
Area: 3S
Permit Number: 000750091
Permit Status: Closed

Region: LA
Permit Category: I
Facility Id: 009315-058175
Facility Type: 09
Facility Status: Closed
Area: 3S
Permit Number: 000771324
Permit Status: Closed

A11
Target Property

HANSON STRUCTURAL PRECAST
13131 LOS ANGELES ST
IRWINDALE, CA 91706

HAZNET **S113111523**
N/A

Site 11 of 11 in cluster A

Actual: 355 ft.

HAZNET:
envid: S113111523
Year: 2013
GEPAID: CAL000221108
Contact: ED WOPSCHALL PRESIDENT

HANSON STRUCTURAL PRECAST (Continued) **S113111523**

Telephone:	6269628751
Mailing Name:	Not reported
Mailing Address:	13131 LOS ANGELES ST
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Los Angeles
TSD EPA ID:	CAD099452708
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.418
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

envid:	S113111523
Year:	2013
GEPAID:	CAL000221108
Contact:	ED WOPSCHALL PRESIDENT
Telephone:	6269628751
Mailing Name:	Not reported
Mailing Address:	13131 LOS ANGELES ST
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0875
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

envid:	S113111523
Year:	2013
GEPAID:	CAL000221108
Contact:	ED WOPSCHALL PRESIDENT
Telephone:	6269628751
Mailing Name:	Not reported
Mailing Address:	13131 LOS ANGELES ST
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Los Angeles
TSD EPA ID:	AZR000501510
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.5
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

envid:	S113111523
Year:	2012
GEPAID:	CAL000221108
Contact:	ED WOPSCHALL PRESIDENT

HANSON STRUCTURAL PRECAST (Continued) **S113111523**

Telephone:	6269628751
Mailing Name:	Not reported
Mailing Address:	13131 LOS ANGELES ST
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Los Angeles
TSD EPA ID:	CAD982444481
TSD County:	San Bernardino
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	3.43425
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	S113111523
Year:	2011
GEPAID:	CAL000221108
Contact:	ED WOPSCHALL PRESIDENT
Telephone:	6269628751
Mailing Name:	Not reported
Mailing Address:	13131 LOS ANGELES ST
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Not reported
TSD EPA ID:	CAD982444481
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.8625
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
23 additional CA_HAZNET: record(s) in the EDR Site Report.

Areas of Concern SE 1/2-1 2837 ft. **SAN GABRIEL VALLEY** **AOCONCERN** **CCA0000001** **N/A**

LOS ANGELES (County), CA

AOCONCERN:
area where VOC contamination is at or above the MCL as designated by region 9 EPA office

NPL	**SAN GABRIEL VALLEY (AREA 2)**	**NPL**	**1000114961**
Region	**SUNSET & SAN BERNARDINO FREEWAY**	**SEMS**	**CAD980818512**
SSE	**BALDWIN PARK, CA 91706**	**US ENG CONTROLS**	
1/2-1		**ROD**	
3015 ft.		**PRP**	

NPL:

EPA ID:	CAD980818512
Cerclis ID:	902092
EPA Region:	9
Federal:	N
Final Date:	1984-05-08 00:00:00
Site Score:	42.240000000000002
Latitude:	34.073611
Longitude:	-117.9361

Category Details:

NPL Status:	Currently on the Final NPL
Category Description:	Depth To Aquifer-<= 10 Feet
Category Value:	1
NPL Status:	Currently on the Final NPL
Category Description:	Distance To Nearest Population-> 0 And <= 1/4 Mile
Category Value:	10

Site Details:

Site Name:	SAN GABRIEL VALLEY (AREA 2)
Site Status:	Final
Site Zip:	91706
Site City:	BALDWIN PARK
Site State:	CA
Federal Site:	No
Site County:	LOS ANGELES
EPA Region:	09
Date Proposed:	09/08/83
Date Deleted:	Not reported
Date Finalized:	05/08/84

Substance Details:

NPL Status:	Currently on the Final NPL
Substance ID:	Not reported
Substance:	Not reported
CAS #:	Not reported
Pathway:	Not reported
Scoring:	Not reported
NPL Status:	Currently on the Final NPL
Substance ID:	U210
Substance:	TETRACHLOROETHENE
CAS #:	127-18-4
Pathway:	GROUND WATER PATHWAY
Scoring:	2
NPL Status:	Currently on the Final NPL
Substance ID:	U211
Substance:	CARBON TETRACHLORIDE
CAS #:	56-23-5
Pathway:	GROUND WATER PATHWAY

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

Scoring: 4

NPL Status: Currently on the Final NPL
Substance ID: U228
Substance: TRICHLOROETHYLENE (TCE)
CAS #: 79-01-6
Pathway: GROUND WATER PATHWAY
Scoring: 2

Summary Details:

Conditions at listing September 1983): San Gabriel Valley Area 2) is a ground water plume that parallels the San Gabriel River to the west in the San Gabriel ground water basin in the Baldwin Park area of Los Angeles County, California. The plume is about 7.5 miles long and 1.5 miles wide.
Ground water is contaminated with trichloroethylene TCE), perchloroethylene PCE), and carbon tetrachloride, according to analyses by State agencies and local water companies. Many public wells in the area exceed the EPA Suggested No Adverse Response Levels SNARL) for TCE and PCE. Approximately 100,000 people are affected. Cities and public water companies in the area have tested to ensure that their water supplies containless than 5 parts per billion ppb) of TCE, a level considered safe for human consumption. When alternative methods of reducing the TCE level below 5 ppb are not effective, wells are removed from service. Status June 1984): A supplemental sampling program of contaminated wells will begin soon to get a snapshot view of the degree of contamination. The State Department of Health Services and EPA are preparing to initiate a remedial investigation/ feasibility study to determine the aerial and vertical extent of contamination and to develop alternatives for treatment and management of the problem. EPA continues its investigation to identify sources of the contamination. This site, along with the threeother San Gabriel Valley sites, was added to the NPL in May 1984 because it involves a serious problem that required taking immediate remedial action.

Site Status Details:
NPL Status: Final
Proposed Date: 09/08/1983
Final Date: 05/08/1984
Deleted Date: Not reported

Narratives Details:
NPL Name: SAN GABRIEL VALLEY (AREA 2)
City: BALDWIN PARK
State: CA

SEMS:
Site ID: 902092
EPA ID: CAD980818512
Cong District: Not reported
FIPS Code: 6037
Latitude: 34.073611
Longitude: -117.9361
FF: N
NPL: Currently on the Final NPL
Non NPL Status: Not reported

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

SEMS Detail:

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	1
Action Code:	CO
Action Name:	RI/FS
SEQ:	1
Start Date:	1987-08-01 00:00:00
Finish Date:	3/31/1994
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	CR
Action Name:	CI
SEQ:	1
Start Date:	1984-05-01 00:00:00
Finish Date:	5/1/1984
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	FE
Action Name:	5 YEAR
SEQ:	1
Start Date:	2007-05-01 00:00:00
Finish Date:	9/27/2007
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	FE
Action Name:	5 YEAR
SEQ:	3
Start Date:	2016-10-31 00:00:00

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

Finish Date:	8/17/2017
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	CR
Action Name:	CI
SEQ:	3
Start Date:	1984-05-01 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	1983-09-01 00:00:00
Finish Date:	9/1/1983
Qual:	H
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	1
Action Code:	RO
Action Name:	ROD
SEQ:	1
Start Date:	1994-03-31 00:00:00
Finish Date:	3/31/1994
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	HR

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

Action Name:	HAZRANK
SEQ:	1
Start Date:	1983-09-01 00:00:00
Finish Date:	9/1/1983
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	RS
Action Name:	RV ASSESS
SEQ:	1
Start Date:	1991-12-27 00:00:00
Finish Date:	12/27/1991
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	1
Action Code:	ED
Action Name:	R/H ASMT
SEQ:	1
Start Date:	1992-09-16 00:00:00
Finish Date:	9/16/1992
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	FE
Action Name:	5 YEAR
SEQ:	2
Start Date:	2012-09-24 00:00:00
Finish Date:	9/24/2012
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

FF:	N
OU:	0
Action Code:	MA
Action Name:	ST COOP
SEQ:	1
Start Date:	2006-06-23 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	1983-03-01 00:00:00
Finish Date:	9/1/1983
Qual:	H
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	1
Action Code:	JF
Action Name:	ECO RISK
SEQ:	1
Start Date:	1992-09-16 00:00:00
Finish Date:	9/16/1992
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	AR
Action Name:	ADMIN REC
SEQ:	1
Start Date:	2000-07-18 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	TA
Action Name:	TECH ASSIST
SEQ:	1
Start Date:	2001-04-03 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	NP
Action Name:	PROPOSED
SEQ:	1
Start Date:	1983-09-08 00:00:00
Finish Date:	9/8/1983
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	NF
Action Name:	NPL FINL
SEQ:	1
Start Date:	1984-05-08 00:00:00
Finish Date:	5/8/1984
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	1
Action Code:	ME
Action Name:	PRP LR
SEQ:	1
Start Date:	2003-09-30 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	5
Action Code:	OM
Action Name:	OM
SEQ:	5
Start Date:	2006-09-28 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	4
Action Code:	OM
Action Name:	OM
SEQ:	4
Start Date:	2005-03-31 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	3
Action Code:	OM
Action Name:	OM
SEQ:	3
Start Date:	2004-09-30 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	2
Action Code:	OM
Action Name:	OM
SEQ:	2
Start Date:	2003-09-30 00:00:00
Finish Date:	Not reported

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	1
Action Code:	OM
Action Name:	OM
SEQ:	1
Start Date:	2003-09-30 00:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	5
Action Code:	BF
Action Name:	PRP RA
SEQ:	5
Start Date:	2004-09-29 00:00:00
Finish Date:	9/28/2006
Qual:	IR
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	5
Action Code:	BE
Action Name:	PRP RD
SEQ:	5
Start Date:	2000-07-21 00:00:00
Finish Date:	9/29/2004
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	3
Action Code:	BF
Action Name:	PRP RA

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

SEQ:	3
Start Date:	2003-03-31 00:00:00
Finish Date:	9/30/2004
Qual:	IR
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	3
Action Code:	BE
Action Name:	PRP RD
SEQ:	3
Start Date:	2000-07-21 00:00:00
Finish Date:	3/31/2003
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	2
Action Code:	BF
Action Name:	PRP RA
SEQ:	2
Start Date:	2002-09-26 00:00:00
Finish Date:	9/30/2003
Qual:	IR
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	2
Action Code:	BE
Action Name:	PRP RD
SEQ:	2
Start Date:	2000-07-21 00:00:00
Finish Date:	9/26/2002
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

OU:	4
Action Code:	BF
Action Name:	PRP RA
SEQ:	4
Start Date:	2003-08-08 00:00:00
Finish Date:	3/31/2005
Qual:	IR
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	4
Action Code:	BE
Action Name:	PRP RD
SEQ:	4
Start Date:	2000-07-21 00:00:00
Finish Date:	8/8/2003
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	9
Site ID:	902092
EPA ID:	CAD980818512
Site Name:	SAN GABRIEL VALLEY (AREA 2)
NPL:	F
FF:	N
OU:	0
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1980-04-01 00:00:00
Finish Date:	4/1/1980
Qual:	Not reported
Current Action Lead:	St Perf

US ENG CONTROLS:

EPA ID:	CAD980818512
Site ID:	0902092
Name:	SAN GABRIEL VALLEY (AREA 2)
Address:	SUNSET & SAN BERNARDINO FREEWAY BALDWIN PARK, CA 91706
EPA Region:	09
County:	LOS ANGELES
Event Code:	Not reported
Actual Date:	03/31/1994
Contact Name:	Not reported
Contact Phone and Ext:	Not reported
Event Code Description:	Not reported

Action ID:	001
Action Name:	RECORD OF DECISION
Action Completion date:	03/31/1994

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Air Stripping
Contact Name: Not reported
Contact Phone and Ext: Not reported
Event Code Description: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/31/1994
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Discharge
Contact Name: Not reported
Contact Phone and Ext: Not reported
Event Code Description: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/31/1994
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Liquid Phase Carbon Adsorption
Contact Name: Not reported
Contact Phone and Ext: Not reported
Event Code Description: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/31/1994
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Monitoring
Contact Name: Not reported
Contact Phone and Ext: Not reported
Event Code Description: Not reported

Action ID: 001
Action Name: RECORD OF DECISION
Action Completion date: 03/31/1994
Operable Unit: 01
Contaminated Media : Groundwater
Engineering Control: Pump And Treat
Contact Name: Not reported
Contact Phone and Ext: Not reported
Event Code Description: Not reported

ROD:
Full-text of USEPA Record of Decision(s) is available from EDR.

PRP:
PRP name: A & J SYSTEMS
A&E PLASTICS CO.
A-1 ORNAMENTAL IRON
ACORN ENGINEERING CO.

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

ACROMIL
ADAMS AND COLTRIN, INC.
ADAMS CAMPBELL CO., LTD.
ADVANCED HEAT TECHNOLOGY CORP.
AEROJET ELECTROSYSTEMS
AEROJET ELECTROSYSTEMS
AEROJET-GENERAL CORP.
AEROJET-GENERAL CORP.
AEROJET-GENERAL CORP.
AEROSOL SERVICES COMPANY
AIR DISTRIBUTION PRODUCTS, INC.
ALLEGIANCE HEALTHCARE CORPORATION
ALLEGIANCE HEALTHCARE CORPORATION
ALLFAST FASTENING SYSTEMS, INC.
ALLIED PHOTO PRODUCTS INC.
ALLSTATE INSURANCE CO.
AMERICAN SHEDS INC.
ARCADIA MACHINE AND TOOL
AREMAC ASSOCIATES
AREMAC HEAT TREATING,INC.
ARMY CORPS OF ENGINEERS
ARTHUR B. SCHULTZ AND JOSEPH POLTORAK
ARTISTIC POLISHING AND PLATING
ASSOCIATED ASPHALT PAVING MATERIALS
ASTRO SEAL, INC.
ASTRO SEAL, INC.
ASTRONAUTIC ENAMELERS
AZUSA GAS SYSTEMS
AZUSA LAND RECLAMATION
AZUSA LAND RECLAMATION
AZUSA PIPE AND TUBE BENDING
AZUSA PIPE AND TUBE BENDING
AZUSA ROCK INC.
B&B RED-I-MIX-CONCRETE INC.
BALL-ICON, BALL GLASS DIV.
BAXTER HEALTHCARE CORPORATION
BDP CO.
BENCHMARK HOLDING GROUP
BENCHMARK TECHNOLOGY
BIRTCHER
BRENT FAMILY TRUST
BROWN JORDEN CO.
C&H DISTRIBUTING
CAL MAT CO.
CALIFORNIA HYDROFORMING CO., INC.
CALIFORNIA STEEL AND TUBE
CALTRANS
CARDINAL INDUSTRIES FINISHERS
CHAMPION PARTS, INC.
CHARLES HOFGAARDEN
CHEM ARROW CORPORATION
CHEMICAL WASTE MANAGEMENT
CHEMLAWN SERVICE CORP.
CHEVRON CORPORATION
CHEVRON USA, INC.
CLAUDEAN MULLINS KAWIE

SAN GABRIEL VALLEY (AREA 2) (Continued) **1000114961**

Click this hyperlink while viewing on your computer to access
193 additional PRP: record(s) in the EDR Site Report.

12
SSE
< 1/8
0.009 mi.
50 ft.

MEDI/NUCLEAR CORP. INC.
4501 LITTLEJOHN ST
BALDWIN PARK, CA 91706

WIP **S106767115**
N/A

Relative:
Lower

Actual:
349 ft.

WIP:

Region:	4
File Number:	108.1364
File Status:	**Historical**
Staff:	TB
Facility Suite:	Not reported

B13
SSW
< 1/8
0.021 mi.
110 ft.

INDUSTRIAL ASPHALT/DURBIN
13130 LOS ANGELES
BALDWIN PARK, CA 91706

HIST CORTESE **S105022664**
N/A

Site 1 of 5 in cluster B

Relative:
Lower

Actual:
345 ft.

HIST CORTESE:

Region:	CORTESE
Facility County Code:	19
Reg By:	LTNKA
Reg Id:	I-12403

B14
SSW
< 1/8
0.021 mi.
110 ft.

INDUSTRIAL ASPHALT/DURBIN
13130 LOS ANGELES ST E
IRWINDALE, CA 91706

LUST **1000726018**
N/A

Site 2 of 5 in cluster B

Relative:
Lower

Actual:
345 ft.

LUST:

Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603703968
Global Id:	T0603703968
Latitude:	34.0919886
Longitude:	-117.9843786
Status:	Completed - Case Closed
Status Date:	07/23/1996
Case Worker:	YR
RB Case Number:	I-12403
Local Agency:	LOS ANGELES COUNTY
File Location:	Not reported
Local Case Number:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

LUST:

Global Id:	T0603703968

INDUSTRIAL ASPHALT/DURBIN (Continued) **1000726018**

Contact Type: Local Agency Caseworker
Contact Name: JOHN AWUJO
Organization Name: LOS ANGELES COUNTY
Address: 900 S FREMONT AVE
City: ALHAMBRA
Email: jawujo@dpw.lacounty.gov
Phone Number: 6264583507

Global Id: T0603703968
Contact Type: Regional Board Caseworker
Contact Name: YUE RONG
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
City: Los Angeles
Email: yrong@waterboards.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0603703968
Action Type: Other
Date: 01/19/1990
Action: Leak Reported

LUST:
Global Id: T0603703968
Status: Open - Case Begin Date
Status Date: 12/27/1989

Global Id: T0603703968
Status: Open - Site Assessment
Status Date: 12/27/1989

Global Id: T0603703968
Status: Open - Site Assessment
Status Date: 12/01/1994

Global Id: T0603703968
Status: Completed - Case Closed
Status Date: 07/23/1996

LUST REG 4:
Region: 4
Regional Board: 04
County: Los Angeles
Facility Id: I-12403
Status: Case Closed
Substance: Waste Oil
Substance Quantity: Not reported
Local Case No: Not reported
Case Type: Groundwater
Abatement Method Used at the Site: Not reported
Global ID: T0603703968
W Global ID: Not reported
Staff: UNK
Local Agency: 19000

INDUSTRIAL ASPHALT/DURBIN (Continued) **1000726018**

Cross Street:	LITTLE JOHN ST	
Enforcement Type:	Not reported	
Date Leak Discovered:	Not reported	
Date Leak First Reported:		1/19/1990
Date Leak Record Entered:	2/10/1990	
Date Confirmation Began:	12/27/1989	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		10/1/1996
Date the Case was Closed:		7/23/1996
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	Not reported	
Leak Source:	Not reported	
Operator:	Not reported	
Water System:	Not reported	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		3357.7199196364719507341751611
Source of Cleanup Funding:		Not reported
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		12/1/1994
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported
Hist Max MTBE Conc in Soil:		Not reported
Significant Interim Remedial Action Taken:		Not reported
GW Qualifier:	Not reported	
Soil Qualifier:	Not reported	
Organization:	Not reported	
Owner Contact:	Not reported	
Responsible Party:	CALMAT COMPANY	
RP Address:	3200 SAN FERNANDO RD, LOS ANGELES CA 90065	
Program:	LUST	
Lat/Long:	34.0918796 / -1	
Local Agency Staff:	Not reported	
Beneficial Use:	Not reported	
Priority:	Not reported	
Cleanup Fund Id:	Not reported	
Suspended:	Not reported	
Assigned Name:	Not reported	
Summary:	Not reported	

B15 **INDUSTRIAL ASPHALT** **SWEEPS UST** **S105032369**
SSW **13130 LOS ANGELES ST** **HIST UST** **N/A**
< 1/8 **IRWINDALE, CA 91706** **LOS ANGELES CO. HMS**
0.021 mi.
110 ft. **Site 3 of 5 in cluster B**

Relative:
Lower

Actual:
345 ft.

SWEEPS UST:

Status:	Active
Comp Number:	12403
Number:	9
Board Of Equalization:	44-003380
Referral Date:	06-30-89
Action Date:	Not reported

INDUSTRIAL ASPHALT (Continued) **S105032369**

Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-012403-000001
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: 1

HIST UST:
File Number: 00026F64
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00026F64.pdf
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

LOS ANGELES CO. HMS:
Region: LA
Permit Category: T
Facility Id: 012276-012403
Facility Type: 0
Facility Status: Removed
Area: 3S
Permit Number: 00004069T
Permit Status: Removed

Region: LA
Permit Category: T
Facility Id: 012276-053579
Facility Type: 0
Facility Status: Removed
Area: 3S
Permit Number: 000628622
Permit Status: Removed

Region: LA

INDUSTRIAL ASPHALT (Continued) **S105032369**

Permit Category: I
Facility Id: 012276-I12403
Facility Type: 05
Facility Status: Removed
Area: 3S
Permit Number: 000133540
Permit Status: Removed

B16 **INDUSTRIAL ASPHALT** **HIST UST** **U001568764**
SSW **13130 LOS ANGELES ST** **N/A**
< 1/8 **IRWINDALE, CA 91706**
0.021 mi.
110 ft. **Site 4 of 5 in cluster B**

Relative:
Lower

Actual:
345 ft.

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000000509
Facility Type:	Other
Other Type:	ASPHALT PLANT
Contact Name:	Not reported
Telephone:	2139604788
Owner Name:	INDUSTRIAL ASPHALT
Owner Address:	BOX 7607
Owner City,St,Zip:	VAN NUYS, CA 91409
Total Tanks:	0001
Tank Num:	001
Container Num:	#1
Year Installed:	1983
Tank Capacity:	00004000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

C17 **BROOKS PRODUCTS INC/SO CALIF** **HIST UST** **U001568731**
ESE **4505 LITTLEJOHN** **N/A**
< 1/8 **BALDWIN PARK, CA 91706**
0.049 mi.
259 ft. **Site 1 of 7 in cluster C**

Relative:
Lower

Actual:
352 ft.

HIST UST:

File Number:	00026842
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00026842.pdf
Region:	STATE
Facility ID:	00000003696
Facility Type:	Other
Other Type:	MANUFACTURER
Contact Name:	MARK MENZING
Telephone:	8184433017
Owner Name:	BROOKS PRODUCTS, INC.
Owner Address:	10141 OLNEY STREET
Owner City,St,Zip:	EL MONTE, CA 91731
Total Tanks:	0002

BROOKS PRODUCTS INC/SO CALIF (Continued) **U001568731**

Tank Num:	001
Container Num:	53-00079
Year Installed:	1974
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	A-1
Year Installed:	Not reported
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

C18 **BROOKS PRODUCTS, INC** **SWEEPS UST** **S101618736**
ESE **4505 LITTLE JOHN ST** **CA FID UST** **N/A**
< 1/8 **BALDWIN PARK, CA**
0.049 mi.
259 ft. **Site 2 of 7 in cluster C**

Relative:
Lower

Actual:
352 ft.

SWEEPS UST:

Status:	Active
Comp Number:	9231
Number:	9
Board Of Equalization:	Not reported
Referral Date:	06-30-89
Action Date:	Not reported
Created Date:	06-30-89
Owner Tank Id:	Not reported
SWRCB Tank Id:	Not reported
Tank Status:	Not reported
Capacity:	Not reported
Active Date:	Not reported
Tank Use:	Not reported
STG:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CA FID UST:

Facility ID:	19004489
Regulated By:	UTNKA
Regulated ID:	00003696
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	8180000000
Mail To:	Not reported
Mailing Address:	P O BOX
Mailing Address 2:	Not reported
Mailing City,St,Zip:	BALDWIN PARK
Contact:	Not reported
Contact Phone:	Not reported

BROOKS PRODUCTS, INC (Continued) **S101618736**

DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

C19
ESE
< 1/8
0.049 mi.
259 ft.

PACK WEST **WIP** **S103980791**
4505 LITTLE JOHN ST **N/A**
BALDWIN PARK, CA 91706

Site 3 of 7 in cluster C

Relative:
Lower

Actual:
352 ft.

WIP:
Region: 4
File Number: 108.1365
File Status: Historical
Staff: DRASMUSS
Facility Suite: Not reported

D20
SW
< 1/8
0.058 mi.
306 ft.

SCE IRWINDALE AUTO SERVICE CTR **HIST UST** **U001568803**
13025 LOS ANGELES ST **LOS ANGELES CO. HMS** **N/A**
IRWINDALE, CA 91706

Site 1 of 7 in cluster D

Relative:
Lower

Actual:
349 ft.

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000022212
Facility Type: Other
Other Type: ELECTRIC UTILITY
Contact Name: SUPERVISOR
Telephone: 8185721801
Owner Name: SOUTHERN CALIFORNIA EDISON CO.
Owner Address: 2244 WALNUT GROVE AVENUE
Owner City,St,Zip: ROSEMEAD, CA 91770
Total Tanks: 0002

Tank Num: 001
Container Num: 260
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: None

Tank Num: 002
Container Num: 260
Year Installed: Not reported
Tank Capacity: 00010000
Tank Used for: PRODUCT
Type of Fuel: DIESEL
Container Construction Thickness: 0000.25
Leak Detection: None

SCE IRWINDALE AUTO SERVICE CTR (Continued) **U001568803**

LOS ANGELES CO. HMS:
Region: LA
Permit Category: T
Facility Id: 000804-000837
Facility Type: 0
Facility Status: Removed
Area: 3S
Permit Number: 00000521T
Permit Status: Removed

D21 **SCE IRWINDALE AUTOMOTIVE SRVE** **AST** **U003057284**
SW **13025 E LOS ANGELES ST** **SWEEPS UST** **N/A**
< 1/8 **IRWINDALE, CA 91706** **HIST UST**
0.058 mi. **LOS ANGELES CO. HMS**
306 ft. **Site 2 of 7 in cluster D** **WIP**

Relative:
Lower

Actual:
349 ft.

AST:
Certified Unified Program Agencies: Not reported
Owner: Southern California Edison
Total Gallons: Not reported
CERSID: 10148679
Facility ID: LACoFA0016628
Business Name: Southern California Edison, Operations Support Business Unit (OSBU)
Phone: 626-302-9549
Fax: Not reported
Mailing Address: PO Box 800 (Attn: CEH&S Compliance - MOB)
Mailing Address City: Rosemead
Mailing Address State: CA
Mailing Address Zip Code: 91770
Operator Name: Southern California Edison
Operator Phone: 626-302-1212
Owner Phone: 626-302-1212
Owner Mail Address: PO Box 800 (Attn: CEH&S Compliance - MOB)
Owner State: CA
Owner Zip Code: 91770
Owner Country: United States
Property Owner Name: Southern California Edison
Property Owner Phone: (626) 302-1212
Property Owner Mailing Address: PO Box 800 (Attn: CEH&S Compliance - MOB)
Property Owner City: Rosemead
Property Owner Stat : CA
Property Owner Zip Code: 91770
Property Owner Country: United States
EPAID: CAD981682693

SWEEPS UST:
Status: Active
Comp Number: 837
Number: 9
Board Of Equalization: 44-007438
Referral Date: 06-30-89
Action Date: Not reported
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-000837-000001
Tank Status: A
Capacity: Not reported

SCE IRWINDALE AUTOMOTIVE SRVE (Continued) **U003057284**

Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: 3

Status: Active
Comp Number: 837
Number: 9
Board Of Equalization: 44-007438
Referral Date: 06-30-89
Action Date: Not reported
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-000837-000002
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: Not reported

Status: Active
Comp Number: 837
Number: 9
Board Of Equalization: 44-007438
Referral Date: 06-30-89
Action Date: Not reported
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-000837-000003
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: Not reported

HIST UST:
File Number: 00028720
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00028720.pdf
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported

SCE IRWINDALE AUTOMOTIVE SRVE (Continued) **U003057284**

Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

LOS ANGELES CO. HMS:
Region: LA
Permit Category: I
Facility Id: 000804-I00837
Facility Type: 01
Facility Status: Permit
Area: 3S
Permit Number: 000004171
Permit Status: Closed

Region: LA
Permit Category: I
Facility Id: 000804-I00837
Facility Type: 01
Facility Status: Permit
Area: 3S
Permit Number: 000296424
Permit Status: Removed

Region: LA
Permit Category: I
Facility Id: 000804-I00837
Facility Type: 01
Facility Status: Permit
Area: 3S
Permit Number: 000317814
Permit Status: Permit

WIP:
Region: 4
File Number: 108.0860
File Status: Historical
Staff: WLIU
Facility Suite: Not reported

D22 **AST** **A100344473**
SW **13025 E LOS ANGELES ST** **N/A**
< 1/8 **IRWINDALE, CA**
0.058 mi.
306 ft. **Site 3 of 7 in cluster D**

Relative: **Lower**
Actual: **349 ft.**

AST:

Certified Unified Program Agencies:	Los Angeles County
Owner:	SO CAL EDISON (13025 LA ST, IRWIND)
Total Gallons:	3702
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported
Owner Phone:	Not reported
Owner Mail Address:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Country:	Not reported
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	Not reported

D23 **SCE - IRWINDALE CORP WAREHOUSE** **UST** **U004050800**
SW **13025 LOS ANGELES ST** **N/A**
< 1/8 **BALDWIN PARK, CA 91706**
0.058 mi.
306 ft. **Site 4 of 7 in cluster D**

Relative: **Lower**
Actual: **349 ft.**

UST:

Facility ID:	837
Permitting Agency:	LOS ANGELES COUNTY
Latitude:	34.0941685
Longitude:	-117.9864356

D24 **SCE - IRWINDALE CORP WAREHOUSE** **LUST** **U001568804**
SW **13025 LOS ANGELES ST** **HIST UST** **N/A**
< 1/8 **IRWINDALE, CA 91706** **CHMIRS**
0.058 mi.
306 ft. **Site 5 of 7 in cluster D**

Relative: **Lower**
Actual: **349 ft.**

LUST:

Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000000525
Global Id:	T10000000525

SCE - IRWINDALE CORP WAREHOUSE (Continued) **U001568804**

Latitude:	34.0924945176435
Longitude:	-117.987269027136
Status:	Completed - Case Closed
Status Date:	10/12/2015
Case Worker:	AJL
RB Case Number:	R-00837
Local Agency:	LOS ANGELES COUNTY
File Location:	Not reported
Local Case Number:	Not reported
Potential Media Affect:	Not reported
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

LUST:

Global Id:	T10000000525
Contact Type:	Regional Board Caseworker
Contact Name:	AHMAD J. LAMAA
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 West 4th Street Suite 200
City:	Los Angeles
Email:	alamaa@waterboards.ca.gov
Phone Number:	Not reported

Global Id:	T10000000525
Contact Type:	Local Agency Caseworker
Contact Name:	IHEANACHO OFO
Organization Name:	LOS ANGELES COUNTY
Address:	900 S FREMONT AVE
City:	ALHAMBRA
Email:	iofo@dpw.lacounty.gov
Phone Number:	6264583512

Global Id:	T10000000525
Contact Type:	Local Agency Caseworker
Contact Name:	PHILLIP GHARIBIANS-TABRIZI
Organization Name:	LOS ANGELES COUNTY
Address:	900 S. FREMONT AVE.
City:	ALHAMBRA
Email:	pgharibians@dpw.lacounty.gov
Phone Number:	Not reported

LUST:

Global Id:	T10000000525
Action Type:	ENFORCEMENT
Date:	03/23/2015
Action:	Notification - Public Participation Document

Global Id:	T10000000525
Action Type:	ENFORCEMENT
Date:	02/05/2013
Action:	Staff Letter

Global Id:	T10000000525
Action Type:	RESPONSE
Date:	08/13/2013
Action:	Soil and Water Investigation Workplan - Regulator Responded

SCE - IRWINDALE CORP WAREHOUSE (Continued) **U001568804**

Global Id: T10000000525
Action Type: ENFORCEMENT
Date: 07/28/2015
Action: State Water Board Closure Order

Global Id: T10000000525
Action Type: RESPONSE
Date: 03/05/2013
Action: Other Report / Document

Global Id: T10000000525
Action Type: ENFORCEMENT
Date: 10/12/2015
Action: Closure/No Further Action Letter

Global Id: T10000000525
Action Type: ENFORCEMENT
Date: 12/13/2012
Action: Referral to Regional Board

LUST:
Global Id: T10000000525
Status: Open - Case Begin Date
Status Date: 07/31/2007

Global Id: T10000000525
Status: Open - Site Assessment
Status Date: 07/31/2007

Global Id: T10000000525
Status: Open - Eligible for Closure
Status Date: 08/15/2013

Global Id: T10000000525
Status: Open - Eligible for Closure
Status Date: 07/28/2015

Global Id: T10000000525
Status: Completed - Case Closed
Status Date: 10/12/2015

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000022211
Facility Type: Other
Other Type: ELECTRIC UTILITY
Contact Name: SUPERVISOR
Telephone: 8185721801
Owner Name: SOUTHERN CALIFORNIA EDISON CO.
Owner Address: 2244 WALNUT GROVE AVENUE
Owner City,St,Zip: ROSEMEAD, CA 91770
Total Tanks: 0001

SCE - IRWINDALE CORP WAREHOUSE (Continued) **U001568804**

Tank Num:	001
Container Num:	259
Year Installed:	Not reported
Tank Capacity:	00000500
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Container Construction Thickness:	Not reported
Leak Detection:	None

CHMIRS:

OES Incident Number:	7-5018
OES notification:	12/18/1997
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Storm drain
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	1997
Agency:	So Cal Edison
Incident Date:	12/18/199712:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Industrial Plant
E Date:	Not reported

SCE - IRWINDALE CORP WAREHOUSE (Continued) **U001568804**

Substance:	Mineral oil no pcbs
Gallons:	100
Unknown:	0
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	While moving a transformer with a fork lift the transformer fell and broke. Oil went into a storm drain while it was raining.

D25 **SOUTHERN CAL EDISON IRWINDALE WAREHOUSE** **RCRA-LQG** **1007199596**
SW **13025 E. LOS ANGELES AVE.** **CAD981682693**
< 1/8 **IRWINDALE, CA 91706**
0.058 mi.
306 ft. **Site 6 of 7 in cluster D**

Relative:
Lower

Actual:
349 ft.

RCRA-LQG:

Date form received by agency:	03/04/1999
Facility name:	SOUTHERN CAL EDISON IRWINDALE WAREHOUSE
Site name:	IRWINDALE WAREHOUSE
Facility address:	13025 E. LOS ANGELES AVE. IRWINDALE, CA 91706
EPA ID:	CAD981682693
Mailing address:	2244 WALNUT GROVE AVE ROOM 405 ROSEMEAD, CA 91770
Contact:	KATHRYN VANDERSLICE
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	626-302-9320
Contact email:	Not reported
EPA Region:	09
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

SOUTHERN CAL EDISON IRWINDALE WAREHOUSE (Continued) **1007199596**

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

D26 **SCE - IRWINDALE CORP. WAREHOUSE** **UST** **U004271201**
SW **13025 LOS ANGELES STREET** **N/A**
< 1/8 **IRWINDALE, CA 91706**
0.058 mi.
306 ft. **Site 7 of 7 in cluster D**

Relative:
Lower

Actual:
349 ft.

UST CLOSURE:

Claim Number:	Case No. R-00837
Type:	Closure Denials and Approved Orders
Deadline Date:	2015-05-29 00:00:00
Documents:	Notice, Draft Order, Closure Summary
Comments:	No Comments Received
Comments URL:	Not reported
Response:	Not reported
Response URL:	Not reported
Comments2:	Not reported
Comments2 URL:	Not reported
Response2:	Not reported
Response2 URL:	Not reported
Closure:	WQO 2015-0109-UST (07/28/2015)
Closure URL:	http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2015/wqo2015_0109_ust.pdf
Uniform:	Uniform Closure Letter (10/12/2015)
Uniform URL:	http://www.waterboards.ca.gov/water_issues/programs/ustcf/docs/prop_closure_cases/r00837_ucl.pdf

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E27 **J-MARK COMPUTER** **WIP** **S106766988**
NNE **13111 BROOKS DR** **N/A**
< 1/8 **BALDWIN PARK, CA 91706**
0.065 mi.
342 ft. **Site 1 of 6 in cluster E**

Relative:
Higher

Actual:
365 ft.

WIP:

Region:	4
File Number:	108.1173
File Status:	**Historical**
Staff:	WLIU
Facility Suite:	A&B

B28 SW < 1/8 0.068 mi. 359 ft. | **CALMAT CO** | **US MINES** | **1016467996** **N/A**

LOS ANGELES (County), CA

Site 5 of 5 in cluster B

Relative: Lower

Actual: 343 ft.

US MINES:

Mine ID:	0401734
SIC code(s):	144200 000000 000000 000000 000000 000000
Entity name:	DURBIN PLANT
Company:	CALMAT CO
Status:	1
Status date:	20121001
Operation Class:	non-Coal Mining
Number of shops:	0
Number of plants:	0
Latitude:	34 05 30
Longitude:	117 59 17

Violations Details:

Violation Number:	6727563
Date Issued:	5/3/2017
Mine Status:	Active
Status Date:	10/1/2012
Action Type:	104(a)
Date Abated:	5/19/2017
Citation/Order:	Citation
Sig and Sub Designation:	Y
Proposed Penalty:	862.00
Paid Penalty:	862.00
Assessment Status code:	Proposed
Assess. Case Status code:	Closed
Assessment Amount:	862.00
Year:	2017

Violation Number:	6727562
Date Issued:	5/3/2017
Mine Status:	Active
Status Date:	10/1/2012
Action Type:	104(g)(1)
Date Abated:	5/3/2017
Citation/Order:	Order
Sig and Sub Designation:	Y
Proposed Penalty:	958.00
Paid Penalty:	958.00
Assessment Status code:	Proposed
Assess. Case Status code:	Closed
Assessment Amount:	958.00
Year:	2017

Violation Number:	8995342
Date Issued:	12/20/2017
Mine Status:	Active
Status Date:	10/1/2012
Action Type:	104(a)
Date Abated:	12/20/2017
Citation/Order:	Citation
Sig and Sub Designation:	Y
Proposed Penalty:	177.00

CALMAT CO (Continued) **1016467996**

Paid Penalty:	177.00
Assessment Status code:	Proposed
Assess. Case Status code:	Closed
Assessment Amount:	177.00
Year:	2017

Violation Number:	6349035
Date Issued:	12/11/2002
Mine Status:	Active
Status Date:	10/01/2012
Action Type:	104(a)
Date Abated:	12/12/2002
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	55.00
Paid Penalty:	55.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	55.00
Year:	2002

Violation Number:	6349039
Date Issued:	12/11/2002
Mine Status:	Active
Status Date:	10/01/2012
Action Type:	104(a)
Date Abated:	12/19/2002
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	55.00
Paid Penalty:	55.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	55.00
Year:	2002

Violation Number:	6349038
Date Issued:	12/11/2002
Mine Status:	Active
Status Date:	10/01/2012
Action Type:	104(a)
Date Abated:	12/12/2002
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	55.00
Paid Penalty:	55.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	55.00
Year:	2002

Violation Number:	6349037
Date Issued:	12/11/2002
Mine Status:	Active
Status Date:	10/01/2012
Action Type:	104(a)
Date Abated:	12/12/2002

CALMAT CO (Continued) **1016467996**

Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 55.00
Paid Penalty: 55.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 55.00
Year: 2002

Violation Number: 6349036
Date Issued: 12/11/2002
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: Not reported
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: Not reported
Paid Penalty: Not reported
Assessment Status code: Not reported
Assess. Case Status code: Not reported
Assessment Amount: Not reported
Year: 2002

Violation Number: 6349034
Date Issued: 12/11/2002
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 12/12/2002
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 55.00
Paid Penalty: 55.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 55.00
Year: 2002

Violation Number: 6349033
Date Issued: 12/10/2002
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 12/11/2002
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 55.00
Paid Penalty: 55.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 55.00
Year: 2002

Violation Number: 6349032
Date Issued: 12/10/2002
Mine Status: Active

CALMAT CO (Continued) **1016467996**

Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 12/11/2002
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 55.00
Paid Penalty: 55.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 55.00
Year: 2002

Violation Number: 8607192
Date Issued: 11/08/2011
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 11/09/2011
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2011

Violation Number: 8607194
Date Issued: 11/08/2011
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 11/09/2011
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2011

Violation Number: 8607193
Date Issued: 11/08/2011
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 11/09/2011
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 100.00
Paid Penalty: 100.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 100.00
Year: 2011

CALMAT CO (Continued) **1016467996**

Violation Number: 8994139
Date Issued: 1/5/2017
Mine Status: Active
Status Date: 10/1/2012
Action Type: 104(a)
Date Abated: 1/5/2017
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 116.00
Paid Penalty: 116.00
Assessment Status code: Proposed
Assess. Case Status code: Closed
Assessment Amount: 116.00
Year: 2017

Violation Number: 8994138
Date Issued: 1/4/2017
Mine Status: Active
Status Date: 10/1/2012
Action Type: 104(a)
Date Abated: 1/4/2017
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 1917.00
Paid Penalty: 0.00
Assessment Status code: Proposed
Assess. Case Status code: Received
Assessment Amount: 1917.00
Year: 2017

Violation Number: 6380130
Date Issued: 09/28/2005
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 09/28/2005
Citation/Order: Citation
Sig and Sub Designation: N
Proposed Penalty: 60.00
Paid Penalty: 60.00
Assessment Status code: Closed
Assess. Case Status code: Proposed
Assessment Amount: 60.00
Year: 2005

Violation Number: 6380131
Date Issued: 09/28/2005
Mine Status: Active
Status Date: 10/01/2012
Action Type: 104(a)
Date Abated: 09/28/2005
Citation/Order: Citation
Sig and Sub Designation: Y
Proposed Penalty: 84.00
Paid Penalty: 84.00
Assessment Status code: Closed
Assess. Case Status code: Proposed

CALMAT CO (Continued) **1016467996**

Assessment Amount:	84.00
Year:	2005

Violation Number:	6340126
Date Issued:	08/15/2002
Mine Status:	Active
Status Date:	10/01/2012
Action Type:	104(g)(1)
Date Abated:	08/21/2002
Citation/Order:	Order
Sig and Sub Designation:	Y
Proposed Penalty:	231.00
Paid Penalty:	231.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	231.00
Year:	2002

Violation Number:	6340123
Date Issued:	08/14/2002
Mine Status:	Active
Status Date:	10/01/2012
Action Type:	104(a)
Date Abated:	08/15/2002
Citation/Order:	Citation
Sig and Sub Designation:	N
Proposed Penalty:	55.00
Paid Penalty:	55.00
Assessment Status code:	Closed
Assess. Case Status code:	Proposed
Assessment Amount:	55.00
Year:	2002

CALMAT CO (Continued) **1016467996**

Click this hyperlink while viewing on your computer to access
55 additional US_MINES: record(s) in the EDR Site Report.

F29
NNW
< 1/8
0.071 mi.
375 ft.

BOB ZADINA TRUCKING INC.
4600 RIVERGRADE RD
IRWINDALE, CA 91765

SWEEPS UST **U001570256**
HIST UST **N/A**

Site 1 of 3 in cluster F

Relative:
Higher

Actual:
359 ft.

SWEEPS UST:

Status:	Active
Comp Number:	10911
Number:	9
Board Of Equalization:	Not reported
Referral Date:	06-30-89
Action Date:	Not reported
Created Date:	06-30-89
Owner Tank Id:	Not reported
SWRCB Tank Id:	19-000-010911-000001
Tank Status:	A
Capacity:	Not reported
Active Date:	06-30-89
Tank Use:	UNKNOWN
STG:	W
Content:	Not reported
Number Of Tanks:	2

Status:	Active
Comp Number:	10911
Number:	9
Board Of Equalization:	Not reported
Referral Date:	06-30-89
Action Date:	Not reported
Created Date:	06-30-89
Owner Tank Id:	Not reported
SWRCB Tank Id:	19-000-010911-000002
Tank Status:	A
Capacity:	Not reported
Active Date:	06-30-89
Tank Use:	UNKNOWN
STG:	W
Content:	Not reported
Number Of Tanks:	Not reported

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000007857
Facility Type:	Not reported
Other Type:	TRUCKING YARD
Contact Name:	ROBERT ZADINA
Telephone:	2139604951
Owner Name:	BOB ZADINA TRUCKING INC.
Owner Address:	P.O. BOX 4608
Owner City,St,Zip:	DIAMOND BAR, CA 91765
Total Tanks:	0001

BOB ZADINA TRUCKING INC. (Continued) **U001570256**

Tank Num:	001
Container Num:	#1
Year Installed:	1970
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

F30 NNW < 1/8 0.071 mi. 375 ft. **BOB ZADINA TRUCKING INC 4600 RIVERGRADE RD IRWINDALE, CA 91706** **HIST UST LOS ANGELES CO. HMS CIWQS** **S106024669 N/A**

Site 2 of 3 in cluster F

Relative: Higher

Actual: 359 ft.

HIST UST:

File Number:	000267D2
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/000267D2.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported

Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

LOS ANGELES CO. HMS:

Region:	LA
Permit Category:	T
Facility Id:	010932-010911
Facility Type:	0
Facility Status:	Removed
Area:	3S
Permit Number:	00002375T
Permit Status:	Removed

CIWQS:

Agency:	Bob Zadina Trucking Inc
Agency Address:	4600 Rivergrade Rd, Irwindale, CA 91701
Place/Project Type:	Industrial - Local Trucking Without Storage
SIC/NAICS:	4212
Region:	4
Program:	INDSTW

BOB ZADINA TRUCKING INC (Continued) **S106024669**

Regulatory Measure Status:	Terminated
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	4 19I003861
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	04/03/1992
Termination Date:	01/01/2003
Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	Not reported
Longitude:	Not reported

F31 **BOB ZADIUM TRUCKING** **UST** **U004048999**
NNW **4600 RIVERGRADE RD** **N/A**
< 1/8 **BALDWIN PARK, CA 91706**
0.071 mi.
375 ft. **Site 3 of 3 in cluster F**

Relative:
Higher

Actual:
359 ft.

UST:

Facility ID:	10911
Permitting Agency:	LOS ANGELES COUNTY
Latitude:	34.09585
Longitude:	-117.98797

C32 **MAC DONALD CARBIDE CO., INC.** **WIP** **S103975841**
ESE **4510 LITTLEJOHN ST** **N/A**
< 1/8 **BALDWIN PARK, CA 91706**
0.080 mi.
421 ft. **Site 4 of 7 in cluster C**

Relative:
Lower

Actual:
353 ft.

WIP:

Region:	4
File Number:	108.1366
File Status:	**Historical**
Staff:	DKOO
Facility Suite:	Not reported

C33 **MACDONALD CARBIDE COMPANY** **RCRA-SQG** **1000191150**
ESE **4510 LITTLEJOHN STREET** **FINDS** **CAD981391410**
< 1/8 **BALDWIN PARK, CA 91706** **ECHO**
0.080 mi. **EMI**
421 ft. **Site 5 of 7 in cluster C**

Relative:
Lower

Actual:
353 ft.

RCRA-SQG:

Date form received by agency:	02/21/1986
Facility name:	MACDONALD CARBIDE CO INC
Facility address:	4510 LITTLEJOHN ST BALDWIN PARK, CA 91706
EPA ID:	CAD981391410

MACDONALD CARBIDE COMPANY (Continued) **1000191150**

Contact:	ENVIRONMENTAL MANAGER
Contact address:	4510 LITTLEJOHN ST BALDWIN PARK, CA 91705
Contact country:	US
Contact telephone:	818-960-4034
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	G&T MACDONALD
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No

MACDONALD CARBIDE COMPANY (Continued) **1000191150**

Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110000477341

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

HAZARDOUS AIR POLLUTANT MAJOR

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000191150
Registry ID:	110000477341
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000477341

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	22274
Air District Name:	SC
SIC Code:	3399
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported

MACDONALD CARBIDE COMPANY (Continued) **1000191150**

Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

E34
NNE
< 1/8
0.082 mi.
432 ft.

UNITED AIR CONDITIONING SERV. **WIP** **S106767264**
13200 BROOKS DR **N/A**
BALDWIN PARK, CA 91706

Site 2 of 6 in cluster E

Relative:
Higher

Actual:
365 ft.

WIP:

Region:	4
File Number:	108.1588
File Status:	**Historical**
Staff:	WLIU
Facility Suite:	C

G35
ENE
< 1/8
0.082 mi.
434 ft.

GIBRALTAR PRODUCTS, INC. **WIP** **S106767116**
4525 LITTLEJOHN ST **N/A**
BALDWIN PARK, CA 91706

Site 1 of 2 in cluster G

Relative:
Higher

Actual:
358 ft.

WIP:

Region:	4
File Number:	108.1367
File Status:	**Historical**
Staff:	TB
Facility Suite:	Not reported

E36
NNE
< 1/8
0.083 mi.
438 ft.

CONTROL OPTICS **WIP** **S106767265**
13211 BROOKS DR **N/A**
BALDWIN PARK, CA 91706

Site 3 of 6 in cluster E

Relative:
Higher

Actual:
365 ft.

WIP:

Region:	4
File Number:	108.1589
File Status:	**Historical**
Staff:	WLIU
Facility Suite:	I&J

37 SE < 1/8 0.086 mi. 455 ft. | **H & L COMPANY**
13263 LOS ANGELES ST
BALDWIN PARK, CA 91706 | **WIP** | **S106767136**
N/A

Relative: Lower
Actual: 353 ft.

WIP:

Region:	4
File Number:	108.1400
File Status:	**Not reported**
Staff:	UNIDENTIFIED
Facility Suite:	Not reported

C38 ESE < 1/8 0.095 mi. 501 ft. | **UPM INC**
13245 LOS ANGELES ST
BALDWIN PARK, CA 91706

Site 6 of 7 in cluster C

Relative: Lower
Actual: 353 ft.

RCRA-SQG
LUST
SWEEPS UST
HIST UST
CA FID UST
FINDS
ECHO
HAZNET
HIST CORTESE
NPDES
CIWQS

1000119305
CAD982332207

RCRA-SQG:

Date form received by agency:	11/09/1987
Facility name:	UPM INC
Facility address:	13245 LOS ANGELES ST BALDWIN PARK, CA 91706
EPA ID:	CAD982332207
Contact:	ENVIRONMENTAL MANAGER
Contact address:	13245 LOS ANGELES ST BALDWIN PARK, CA 91706
Contact country:	US
Contact telephone:	818-962-4001
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

UPM INC (Continued) **1000119305**

Owner/operator name:	RAYMOND L DOWLING
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

LUST:

Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603703773
Global Id:	T0603703773
Latitude:	34.093092
Longitude:	-117.982912
Status:	Completed - Case Closed
Status Date:	06/26/1996
Case Worker:	YR
RB Case Number:	I-11267
Local Agency:	LOS ANGELES COUNTY
File Location:	Not reported
Local Case Number:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Not reported

LUST:

Global Id:	T0603703773
Contact Type:	Local Agency Caseworker
Contact Name:	JOHN AWUJO
Organization Name:	LOS ANGELES COUNTY
Address:	900 S FREMONT AVE
City:	ALHAMBRA
Email:	jawujo@dpw.lacounty.gov

UPM INC (Continued) **1000119305**

Phone Number: 6264583507

Global Id: T0603703773
Contact Type: Regional Board Caseworker
Contact Name: YUE RONG
Organization Name: LOS ANGELES RWQCB (REGION 4)
Address: 320 W. 4TH ST., SUITE 200
City: Los Angeles
Email: yrong@waterboards.ca.gov
Phone Number: Not reported

LUST:
Global Id: T0603703773
Action Type: Other
Date: 02/28/1990
Action: Leak Reported

LUST:
Global Id: T0603703773
Status: Open - Case Begin Date
Status Date: 02/28/1990

Global Id: T0603703773
Status: Completed - Case Closed
Status Date: 06/26/1996

SWEEPS UST:
Status: Not reported
Comp Number: 11267
Number: Not reported
Board Of Equalization: 44-009205
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-011267-000001
Tank Status: Not reported
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: OTHER
Number Of Tanks: 3

Status: Not reported
Comp Number: 11267
Number: Not reported
Board Of Equalization: 44-009205
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-011267-000002
Tank Status: Not reported
Capacity: 3000

UPM INC (Continued) **1000119305**

Active Date:	Not reported
Tank Use:	UNKNOWN
STG:	PRODUCT
Content:	Not reported
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	11267
Number:	Not reported
Board Of Equalization:	44-009205
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	19-000-011267-000003
Tank Status:	Not reported
Capacity:	2000
Active Date:	Not reported
Tank Use:	OIL
STG:	WASTE
Content:	Not reported
Number Of Tanks:	Not reported

HIST UST:

File Number:	00028475
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00028475.pdf
Region:	STATE
Facility ID:	00000047431
Facility Type:	Other
Other Type:	CUSTOM INJECTION MOL
Contact Name:	DON ALLEN
Telephone:	8189624001
Owner Name:	UNIVERSAL PLASTIC MOLD, INC.
Owner Address:	13245 LOS ANGELES STREET
Owner City,St,Zip:	BALDWIN PARK, CA 91706
Total Tanks:	0003

Tank Num:	001
Container Num:	101
Year Installed:	1978
Tank Capacity:	00010500
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

Tank Num:	002
Container Num:	102
Year Installed:	1978
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

Tank Num:	003
Container Num:	103

UPM INC (Continued) **1000119305**

Year Installed:	1978
Tank Capacity:	00003000
Tank Used for:	PRODUCT
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Visual, Stock Inventor

Click here for Geo Tracker PDF:

CA FID UST:

Facility ID:	19002323
Regulated By:	UTNKI
Regulated ID:	00047431
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	8189624001
Mail To:	Not reported
Mailing Address:	13245 LOS ANGELES ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	BALDWIN PARK 91706
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

FINDS:

Registry ID: 110002795468

Environmental Interest/Information System

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

UPM INC (Continued) **1000119305**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000119305
Registry ID:	110002795468
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002795468

HAZNET:

envid:	1000119305
Year:	2016
GEPAID:	CAD982332207
Contact:	JASON DOWLING
Telephone:	6269624001
Mailing Name:	Not reported
Mailing Address:	13245 LOS ANGELES ST
Mailing City,St,Zip:	BALDWIN PARK, CA 917062244
Gen County:	Los Angeles
TSD EPA ID:	CAT080013352
TSD County:	Los Angeles
Waste Category:	Waste oil and mixed oil
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	9.272
Cat Decode:	Waste oil and mixed oil
Method Decode:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Facility County:	Los Angeles

envid:	1000119305
Year:	2016
GEPAID:	CAD982332207
Contact:	JASON DOWLING
Telephone:	6269624001
Mailing Name:	Not reported
Mailing Address:	13245 LOS ANGELES ST
Mailing City,St,Zip:	BALDWIN PARK, CA 917062244
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	8.814
Cat Decode:	Other organic solids
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Los Angeles

envid:	1000119305
Year:	2015
GEPAID:	CAD982332207
Contact:	JASON DOWLING
Telephone:	6269624001
Mailing Name:	Not reported

UPM INC (Continued) **1000119305**

Mailing Address: 13245 LOS ANGELES ST
Mailing City,St,Zip: BALDWIN PARK, CA 917062244
Gen County: Los Angeles
TSD EPA ID: Not reported
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 2.185
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: 1000119305
Year: 2015
GEPAID: CAD982332207
Contact: JASON DOWLING
Telephone: 6269624001
Mailing Name: Not reported
Mailing Address: 13245 LOS ANGELES ST
Mailing City,St,Zip: BALDWIN PARK, CA 917062244
Gen County: Los Angeles
TSD EPA ID: AZR000501510
TSD County: 99
Waste Category: Oil/water separation sludge
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.02085
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: 1000119305
Year: 2015
GEPAID: CAD982332207
Contact: JASON DOWLING
Telephone: 6269624001
Mailing Name: Not reported
Mailing Address: 13245 LOS ANGELES ST
Mailing City,St,Zip: BALDWIN PARK, CA 917062244
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 5.55
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
64 additional CA_HAZNET: record(s) in the EDR Site Report.

HIST CORTESE:
Region: CORTESE
Facility County Code: 19

UPM INC (Continued) **1000119305**

Reg By: LTNKA
Reg Id: I-11267

NPDES:

Npdes Number:	CAS000001
Facility Status:	Active
Agency Id:	0
Region:	4
Regulatory Measure Id:	323119
Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19I020781
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/06/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	UPM Inc
Discharge Address:	13245 Los Angeles St
Discharge City:	Baldwin Park
Discharge State:	California
Discharge Zip:	91706
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported

UPM INC (Continued) **1000119305**

CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	4
Regulatory Measure Id:	323119
Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	4 19I020781
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	05/09/2008
PROCESSED DATE:	04/06/2007
STATUS CODE NAME:	Active
STATUS DATE:	04/06/2007
PLACE SIZE:	7
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Michael Hartman
FACILITY CONTACT TITLE:	Logistics & Safety Manager
FACILITY CONTACT PHONE:	626-962-4001
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	mhartman@upminc.com
OPERATOR NAME:	UPM Inc
OPERATOR ADDRESS:	13245 Los Angeles St
OPERATOR CITY:	Baldwin Park
OPERATOR STATE:	California

UPM INC (Continued) **1000119305**

OPERATOR ZIP:	91706
OPERATOR CONTACT NAME:	Jason Dowling
OPERATOR CONTACT TITLE:	President
OPERATOR CONTACT PHONE:	626-962-4001
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	jdowling@upminc.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	California
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	San Gabriel River
CERTIFIER NAME:	MICHAEL HARTMAN
CERTIFIER TITLE:	LOGISTICS&SAFETY MGR.
CERTIFICATION DATE:	16-JUN-15
PRIMARY SIC:	3089-Plastics Products, NEC
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

CIWQS:

Agency:	UPM Inc
Agency Address:	13245 Los Angeles St, Baldwin Park, CA 91706
Place/Project Type:	Industrial - Plastics Products, NEC
SIC/NAICS:	3089
Region:	4
Program:	INDSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water industrial
Order Number:	2014-0057-DWQ
WDID:	4 19I020781
NPDES Number:	CAS000001
Adoption Date:	Not reported
Effective Date:	04/06/2007
Termination Date:	Not reported

UPM INC (Continued) **1000119305**

Expiration/Review Date:	Not reported
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.09205
Longitude:	-117.98344

C39 ESE < 1/8 0.095 mi. 501 ft. **UNIVERSAL PLASTIC MOLD** **LUST** **S100224317**
13245 LOS ANGELES ST **EMI** **N/A**
BALDWIN PARK, CA 91706 **WIP**

Site 7 of 7 in cluster C

Relative: Lower
Actual: 353 ft.

LUST REG 4:

Region:	4	
Regional Board:	04	
County:	Los Angeles	
Facility Id:	I-11267	
Status:	Case Closed	
Substance:	Waste Oil	
Substance Quantity:	Not reported	
Local Case No:	Not reported	
Case Type:	Soil	
Abatement Method Used at the Site:		Not reported
Global ID:	T0603703773	
W Global ID:	Not reported	
Staff:	UNK	
Local Agency:	19000	
Cross Street:	Not reported	
Enforcement Type:	Not reported	
Date Leak Discovered:	Not reported	
Date Leak First Reported:		2/28/1990
Date Leak Record Entered:	3/6/1990	
Date Confirmation Began:	Not reported	
Date Leak Stopped:	Not reported	
Date Case Last Changed on Database:		5/23/1990
Date the Case was Closed:		6/26/1996
How Leak Discovered:	Not reported	
How Leak Stopped:	Not reported	
Cause of Leak:	Not reported	
Leak Source:	Not reported	
Operator:	Not reported	
Water System:	Not reported	
Well Name:	Not reported	
Approx. Dist To Production Well (ft):		2793.4505597658825852202626505
Source of Cleanup Funding:		Not reported
Preliminary Site Assessment Workplan Submitted:		Not reported
Preliminary Site Assessment Began:		Not reported
Pollution Characterization Began:		Not reported
Remediation Plan Submitted:		Not reported
Remedial Action Underway:		Not reported
Post Remedial Action Monitoring Began:		Not reported
Enforcement Action Date:		Not reported
Historical Max MTBE Date:		Not reported
Hist Max MTBE Conc in Groundwater:		Not reported

UNIVERSAL PLASTIC MOLD (Continued) **S100224317**

Hist Max MTBE Conc in Soil: Not reported
Significant Interim Remedial Action Taken: Not reported
GW Qualifier: Not reported
Soil Qualifier: Not reported
Organization: Not reported
Owner Contact: Not reported
Responsible Party: UNIVERSAL PLASTIC MOLDING
RP Address: 13245 LOS ANGELES ST, BALDWIN PARK, CA 91706
Program: LUST
Lat/Long: 34.0919186 / -1
Local Agency Staff: Not reported
Beneficial Use: Not reported
Priority: Not reported
Cleanup Fund Id: Not reported
Suspended: Not reported
Assigned Name: Not reported
Summary: Not reported

EMI:
Year: 1987
County Code: 19
Air Basin: SC
Facility ID: 26720
Air District Name: SC
SIC Code: 3079
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 8
Reactive Organic Gases Tons/Yr: 8
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 1
Part. Matter 10 Micrometers and Smllr Tons/Yr: 1

WIP:
Region: 4
File Number: 108.1398
File Status: Historical
Staff: DKOO
Facility Suite: Not reported

E40 **QUIK STRAP INC.** **WIP** **S106767263**
NNE **13300 BROOKS DR** **N/A**
< 1/8 **BALDWIN PARK, CA 91706**
0.097 mi.
511 ft. **Site 4 of 6 in cluster E**

Relative:
Higher

Actual:
365 ft.

WIP:
Region: 4
File Number: 108.1587
File Status: Not reported
Staff: UNIDENTIFIED
Facility Suite: G

E41
NNE
< 1/8
0.097 mi.
511 ft.

ASLAN COMPUTER CORP.
13300 BROOKS DR
BALDWIN PARK, CA 91706

Site 5 of 6 in cluster E

WIP **S106767368**
N/A

Relative:
Higher

Actual:
365 ft.

WIP:
Region: 4
File Number: 108.7163
File Status: **Historical**
Staff: WLIU
Facility Suite: A

E42
NNE
< 1/8
0.099 mi.
522 ft.

WESTERN POWER SYSTEMS
13311 BROOKS DR
BALDWIN PARK, CA 91706

Site 6 of 6 in cluster E

WIP **S106767266**
N/A

Relative:
Higher

Actual:
366 ft.

WIP:
Region: 4
File Number: 108.1590
File Status: **Historical**
Staff: UNIDENTIFIED
Facility Suite: Not reported

H43
NE
< 1/8
0.112 mi.
590 ft.

AMS, INC.
4801 LITTLEJOHN ST
BALDWIN PARK, CA 91706

Site 1 of 2 in cluster H

WIP **S106767119**
N/A

Relative:
Higher

Actual:
364 ft.

WIP:
Region: 4
File Number: 108.1373
File Status: **Historical**
Staff: WLIU
Facility Suite: ABE

44
East
1/8-1/4
0.131 mi.
693 ft.

ERIC INDUSTRIES, INC.
4530 LITTLEJOHN ST
BALDWIN PARK, CA 91706

WIP **S106767117**
N/A

Relative:
Higher

Actual:
358 ft.

WIP:
Region: 4
File Number: 108.1368
File Status: **Historical**
Staff: TB
Facility Suite: Not reported

G45
ENE
1/8-1/4
0.133 mi.
702 ft.

Relative:
Higher

Actual:
362 ft.

MILLER GRAPHICS INC
4550 LITTLEJOHN ST
BALDWIN PARK, CA 91706

Site 2 of 2 in cluster G

RCRA-SQG
FINDS
ECHO
EMI
HAZNET
WIP

1000280914
CAD052390036

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	MILLER GRAPHICS INC
Facility address:	4550 LITTLEJOHN ST BALDWIN PARK, CA 91706
EPA ID:	CAD052390036
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	FRANK MILLER
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No

MILLER GRAPHICS INC (Continued) **1000280914**

Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	10/31/1985
Site name:	MILLER GRAPHICS INC
Classification:	Large Quantity Generator
Violation Status:	No violations found

FINDS:

Registry ID: 110002648966

Environmental Interest/Information System

AIR EMISSIONS CLASSIFICATION UNKNOWN

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000280914
Registry ID:	110002648966
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002648966

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	49800
Air District Name:	SC
SIC Code:	2752
Air District Name:	SOUTH COAST AQMD

MILLER GRAPHICS INC (Continued) **1000280914**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	49800
Air District Name:	SC
SIC Code:	2752
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	49800
Air District Name:	SC
SIC Code:	2752
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	49800
Air District Name:	SC
SIC Code:	2752
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

MILLER GRAPHICS INC (Continued) **1000280914**

SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 1999
County Code: 19
Air Basin: SC
Facility ID: 49800
Air District Name: SC
SIC Code: 2752
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 2000
County Code: 19
Air Basin: SC
Facility ID: 49800
Air District Name: SC
SIC Code: 2752
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 1
Reactive Organic Gases Tons/Yr: 1
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

Year: 2001
County Code: 19
Air Basin: SC
Facility ID: 49800
Air District Name: SC
SIC Code: 2752
Air District Name: SOUTH COAST AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 0
Reactive Organic Gases Tons/Yr: 0
Carbon Monoxide Emissions Tons/Yr: 0
NOX - Oxides of Nitrogen Tons/Yr: 0
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 0
Part. Matter 10 Micrometers and Smllr Tons/Yr: 0

HAZNET:
envid: 1000280914

MILLER GRAPHICS INC (Continued) **1000280914**

Year:	2006
GEPAID:	CAD052390036
Contact:	LA RETA MILLER/CFO
Telephone:	6268141453
Mailing Name:	Not reported
Mailing Address:	4550 LITTLEJOHN ST
Mailing City,St,Zip:	BALDWIN PARK, CA 917060000
Gen County:	Not reported
TSD EPA ID:	ARD981057870
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Not reported
Tons:	0.02
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	1000280914
Year:	2006
GEPAID:	CAD052390036
Contact:	LA RETA MILLER/CFO
Telephone:	6268141453
Mailing Name:	Not reported
Mailing Address:	4550 LITTLEJOHN ST
Mailing City,St,Zip:	BALDWIN PARK, CA 917060000
Gen County:	Not reported
TSD EPA ID:	ARD981057870
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Not reported
Tons:	0.22
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	1000280914
Year:	2003
GEPAID:	CAD052390036
Contact:	LA RETA MILLER/CFO
Telephone:	6268141453
Mailing Name:	Not reported
Mailing Address:	4550 LITTLEJOHN ST
Mailing City,St,Zip:	BALDWIN PARK, CA 917060000
Gen County:	Not reported
TSD EPA ID:	CAD981402522
TSD County:	Not reported
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	0.18
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	1000280914
Year:	2002
GEPAID:	CAD052390036
Contact:	LA RETA MILLER/CFO

MILLER GRAPHICS INC (Continued) **1000280914**

Telephone:	6268141453
Mailing Name:	Not reported
Mailing Address:	4550 LITTLEJOHN ST
Mailing City,St,Zip:	BALDWIN PARK, CA 917060000
Gen County:	Not reported
TSD EPA ID:	CAD981402522
TSD County:	Not reported
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	0.39
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	1000280914
Year:	2002
GEPAID:	CAD052390036
Contact:	LA RETA MILLER/CFO
Telephone:	6268141453
Mailing Name:	Not reported
Mailing Address:	4550 LITTLEJOHN ST
Mailing City,St,Zip:	BALDWIN PARK, CA 917060000
Gen County:	Not reported
TSD EPA ID:	CAD093459485
TSD County:	Not reported
Waste Category:	Photochemicals/photoprocessing waste
Disposal Method:	Recycler
Tons:	0.12
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

Click this hyperlink while viewing on your computer to access
13 additional CA_HAZNET: record(s) in the EDR Site Report.

WIP:

Region:	4
File Number:	108.1369
File Status:	**Historical**
Staff:	TB
Facility Suite:	Not reported

46
NE
1/8-1/4
0.134 mi.
705 ft.

VIDEO TUTORS INSTITUTE **WIP** **S106767118**
4610 LITTLEJOHN ST **N/A**
BALDWIN PARK, CA 91706

Relative:
Higher

Actual:
364 ft.

WIP:

Region:	4
File Number:	108.1372
File Status:	**Historical**
Staff:	WLIU
Facility Suite:	Not reported

H47 NE 1/8-1/4 0.134 mi. 705 ft. — **ADVANCED COLOR & CHEMICAL CORP**, **4800 LITTLE JOHN ST**, **BALDWIN PARK, CA 91706** — **WIP** — **S106767344**, **N/A**

Site 2 of 2 in cluster H

Relative: Higher
Actual: 365 ft.

WIP:

Region:	4
File Number:	108.1713
File Status:	**Historical**
Staff:	UNIDENTIFIED
Facility Suite:	Not reported

I48 NNE 1/8-1/4 0.150 mi. 792 ft. — **HOME SAVINGS OF AMERICA**, **4900 RIVERGRADE RD**, **IRWINDALE, CA 91706** — **HIST UST**, **HAZNET** — **S113004611**, **N/A**

Site 1 of 8 in cluster I

Relative: Higher
Actual: 369 ft.

HIST UST:

File Number:	00026E56
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00026E56.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

HAZNET:

envid:	S113004611
Year:	2004
GEPAID:	CAD981390933
Contact:	MYITZU SOE
Telephone:	8188145187

HOME SAVINGS OF AMERICA (Continued) **S113004611**

Mailing Name:	Not reported
Mailing Address:	4900 RIVERGRADE RD
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Not reported
TSD EPA ID:	CAT080013352
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Not reported
Tons:	0.09
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	S113004611
Year:	1998
GEPAID:	CAD981390933
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	4900 RIVERGRADE RD
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Not reported
TSD EPA ID:	CAD028409019
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Treatment, Tank
Tons:	.3127
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	S113004611
Year:	1998
GEPAID:	CAD981390933
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	4900 RIVERGRADE RD
Mailing City,St,Zip:	IRWINDALE, CA 917060000
Gen County:	Not reported
TSD EPA ID:	CAD028409019
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Transfer Station
Tons:	.5212
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Los Angeles

envid:	S113004611
Year:	1998
GEPAID:	CAD981390933
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	4900 RIVERGRADE RD
Mailing City,St,Zip:	IRWINDALE, CA 917060000

HOME SAVINGS OF AMERICA (Continued) **S113004611**

Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Organic liquids (nonsolvents) with halogens
Disposal Method: Treatment, Tank
Tons: .2085
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

envid: S113004611
Year: 1998
GEPAID: CAD981390933
Contact: Not reported
Telephone: 0000000000
Mailing Name: Not reported
Mailing Address: 4900 RIVERGRADE RD
Mailing City,St,Zip: IRWINDALE, CA 917060000
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Laboratory waste chemicals
Disposal Method: Transfer Station
Tons: .0500
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
29 additional CA_HAZNET: record(s) in the EDR Site Report.

I49
NNE
1/8-1/4
0.150 mi.
792 ft.

Relative:
Higher

Actual:
369 ft.

SAN GABRIEL VALLEY CORPORATE CAMPUS
4900 RIVERGRADE ROAD
IRWINDALE, CA 91706

Site 2 of 8 in cluster I

SWEEPS UST
HIST UST
EMI
NPDES
WIP
CIWQS

1000198492
N/A

SWEEPS UST:
Status: Not reported
Comp Number: 7564
Number: Not reported
Board Of Equalization: Not reported
Referral Date: Not reported
Action Date: Not reported
Created Date: Not reported
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-007564-000001
Tank Status: Not reported
Capacity: 1
Active Date: Not reported
Tank Use: UNKNOWN
STG: PRODUCT
Content: Not reported
Number Of Tanks: 1

Status: Active
Comp Number: 7564

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

Number: 1
Board Of Equalization: Not reported
Referral Date: 08-01-91
Action Date: 08-01-91
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-007564-000002
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: 4

Status: Active
Comp Number: 7564
Number: 1
Board Of Equalization: Not reported
Referral Date: 08-01-91
Action Date: 08-01-91
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-007564-000003
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: Not reported

Status: Active
Comp Number: 7564
Number: 1
Board Of Equalization: Not reported
Referral Date: 08-01-91
Action Date: 08-01-91
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-007564-000004
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: Not reported

Status: Active
Comp Number: 7564
Number: 1
Board Of Equalization: Not reported
Referral Date: 08-01-91
Action Date: 08-01-91
Created Date: 06-30-89
Owner Tank Id: Not reported

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

SWRCB Tank Id:	19-000-007564-000005
Tank Status:	A
Capacity:	10000
Active Date:	05-17-90
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	Not reported

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000041578
Facility Type:	Other
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	2133851900
Owner Name:	HOME SAVINGS OF AMERICA
Owner Address:	3731 WILSHIRE BLVD.
Owner City,St,Zip:	LOS ANGELES, CA 90010
Total Tanks:	0004
Tank Num:	001
Container Num:	838633
Year Installed:	1981
Tank Capacity:	00001000
Tank Used for:	WASTE
Type of Fuel:	WASTE OIL
Container Construction Thickness:	10
Leak Detection:	None
Tank Num:	001
Container Num:	1
Year Installed:	1984
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	1/4
Leak Detection:	Groundwater Monitoring Well
Tank Num:	002
Container Num:	838594
Year Installed:	1981
Tank Capacity:	00009970
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	1/4
Leak Detection:	None
Tank Num:	003
Container Num:	842859
Year Installed:	1981
Tank Capacity:	00009970
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	1/4

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

Leak Detection:	None

Tank Num:	004
Container Num:	842858
Year Installed:	1981
Tank Capacity:	00009970
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	1/4
Leak Detection:	None

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6030
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	2
Reactive Organic Gases Tons/Yr:	1
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1995
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	1
NOX - Oxides of Nitrogen Tons/Yr:	2
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1997
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	1998
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

Year:	1999
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2000
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2001
County Code:	19
Air Basin:	SC
Facility ID:	78797
Air District Name:	SC
SIC Code:	6035
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	3
Reactive Organic Gases Tons/Yr:	2
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

NPDES:

Npdes Number:	CAS000002
Facility Status:	Active
Agency Id:	0
Region:	4
Regulatory Measure Id:	445524

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	4 19C369487
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	04/21/2014
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Metropolitan Life Insurance Co
Discharge Address:	4900 Rivergrade Road
Discharge City:	Irwindale
Discharge State:	California
Discharge Zip:	91706
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	4
Regulatory Measure Id:	445524
Order No:	Not reported
Regulatory Measure Type:	Construction
Place Id:	Not reported
WDID:	4 19C369487
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	04/08/2014
PROCESSED DATE:	04/21/2014
STATUS CODE NAME:	Active
STATUS DATE:	04/21/2014
PLACE SIZE:	2.18
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Jason Bonomo
FACILITY CONTACT TITLE:	Real Estate Manager
FACILITY CONTACT PHONE:	626-813-2525
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	jason.bonomo@cbre.com
OPERATOR NAME:	Metropolitan Life Insurance Co
OPERATOR ADDRESS:	4900 Rivergrade Road
OPERATOR CITY:	Irwindale
OPERATOR STATE:	California
OPERATOR ZIP:	91706
OPERATOR CONTACT NAME:	Jason Bonomo
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	626-813-2525
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	jason.bonomo@cbre.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	John M Cruikshank Consultants Inc
DEVELOPER ADDRESS:	411 N Harbor Blvd

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

DEVELOPER CITY:	San Pedro
DEVELOPER STATE:	California
DEVELOPER ZIP:	90731
DEVELOPER CONTACT NAME:	John Cruikshank
DEVELOPER CONTACT TITLE:	P.E., QSD/QSP
CONSTYPE LINEAR UTILITY IND:	N
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	N
CONSTYPE BELOW GROUND IND:	N
CONSTYPE CABLE LINE IND:	N
CONSTYPE COMM LINE IND:	N
CONSTYPE COMMERTIAL IND:	N
CONSTYPE ELECTRICAL LINE IND:	N
CONSTYPE GAS LINE IND:	N
CONSTYPE INDUSTRIAL IND:	N
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	N
CONSTYPE RECONS IND:	N
CONSTYPE RESIDENTIAL IND:	N
CONSTYPE TRANSPORT IND:	N
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	N
CONSTYPE WATER SEWER IND:	N
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Jason Bonomo
CERTIFIER TITLE:	Real Estate Manager
CERTIFICATION DATE:	08-APR-14
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

WIP:

Region:	4
File Number:	108.1649
File Status:	**Historical**
Staff:	JPRICE
Facility Suite:	Not reported

CIWQS:

Agency:	Metropolitan Life Insurance Co
Agency Address:	4900 Rivergrade Road Suite A110, Irwindale, CA 91706
Place/Project Type:	Construction
SIC/NAICS:	Not reported
Region:	4
Program:	CONSTW
Regulatory Measure Status:	Active
Regulatory Measure Type:	Storm water construction
Order Number:	2009-0009-DWQ
WDID:	4 19C369487
NPDES Number:	CAS000002
Adoption Date:	Not reported
Effective Date:	04/21/2014
Termination Date:	Not reported
Expiration/Review Date:	Not reported

SAN GABRIEL VALLEY CORPORATE CAMPUS (Continued) **1000198492**

Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	Not reported
TTWQ:	Not reported
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.100949
Longitude:	-117.980771

I50
NNE
1/8-1/4
0.150 mi.
792 ft.

SAN GABRIEL VALLEY CORP CAMPUS **UST** **U004050606**
4900 RIVERGRADE RD. #A-110 **N/A**
IRWINDALE, CA 91706

Site 3 of 8 in cluster I

Relative:
Higher

Actual:
369 ft.

UST:

Facility ID:	7564
Permitting Agency:	LOS ANGELES COUNTY
Latitude:	34.10056
Longitude:	-117.98225

Facility ID:	LACoFA0022032
Permitting Agency:	Los Angeles County Fire Department
Latitude:	34.1006
Longitude:	-117.98212

I51
NNE
1/8-1/4
0.150 mi.
792 ft.

HOME SAVINGS OF AMERICA **LUST** **S109690851**
4900 RIVERGRADE RD N **LOS ANGELES CO. HMS** **N/A**
IRWINDALE, CA 91706

Site 4 of 8 in cluster I

Relative:
Higher

Actual:
369 ft.

LUST:

Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T10000000547
Global Id:	T10000000547
Latitude:	34.1015753
Longitude:	-117.9808784
Status:	Completed - Case Closed
Status Date:	07/12/2017
Case Worker:	JR
RB Case Number:	R-07564
Local Agency:	LOS ANGELES COUNTY
File Location:	Regional Board
Local Case Number:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Heating Oil / Fuel Oil
Site History:	Not reported

LUST:

Global Id:	T10000000547
Contact Type:	Regional Board Caseworker
Contact Name:	JAMES RYAN
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	West 4th Street, Suite 200
City:	LOS ANGELES

HOME SAVINGS OF AMERICA (Continued) **S109690851**

Email: jamesw.ryan@waterboards.ca.gov
Phone Number: 2135766711

Global Id: T10000000547
Contact Type: Local Agency Caseworker
Contact Name: JOHN AWUJO
Organization Name: LOS ANGELES COUNTY
Address: 900 S FREMONT AVE
City: ALHAMBRA
Email: jawujo@dpw.lacounty.gov
Phone Number: 6264583507

LUST:

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 10/21/2016
Action: Notification - Preclosure

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 06/06/2016
Action: Staff Letter

Global Id: T10000000547
Action Type: RESPONSE
Date: 07/02/2015
Action: Tank Removal Report / UST Sampling Report

Global Id: T10000000547
Action Type: RESPONSE
Date: 06/26/1991
Action: Tank Removal Report / UST Sampling Report

Global Id: T10000000547
Action Type: RESPONSE
Date: 05/13/2016
Action: Soil and Water Investigation Workplan - Regulator Responded

Global Id: T10000000547
Action Type: RESPONSE
Date: 09/16/1991
Action: Tank Removal Report / UST Sampling Report

Global Id: T10000000547
Action Type: RESPONSE
Date: 12/18/1991
Action: Soil Vapor Intrusion Investigation Report

Global Id: T10000000547
Action Type: RESPONSE
Date: 11/20/1989
Action: Soil and Water Investigation Report

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 07/12/2017
Action: Closure/No Further Action Letter

HOME SAVINGS OF AMERICA (Continued) **S109690851**

Global Id: T10000000547
Action Type: RESPONSE
Date: 07/15/2015
Action: Soil and Water Investigation Workplan

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 05/05/2015
Action: Staff Letter

Global Id: T10000000547
Action Type: RESPONSE
Date: 12/21/2016
Action: Correspondence

Global Id: T10000000547
Action Type: RESPONSE
Date: 07/15/2015
Action: Correspondence

Global Id: T10000000547
Action Type: RESPONSE
Date: 08/31/2016
Action: Site Assessment Report

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 07/01/2013
Action: Referral to Other State Agency

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 03/22/2007
Action: Staff Letter

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 05/18/1992
Action: Closure/No Further Action Letter

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 03/18/2015
Action: Referral to Regional Board

Global Id: T10000000547
Action Type: ENFORCEMENT
Date: 03/04/2016
Action: Staff Letter

LUST:
Global Id: T10000000547
Status: Open - Case Begin Date
Status Date: 03/20/2007

Global Id: T10000000547
Status: Open - Site Assessment

HOME SAVINGS OF AMERICA (Continued) **S109690851**

Status Date: 03/20/2007

Global Id: T10000000547
Status: Open - Eligible for Closure
Status Date: 10/21/2016

Global Id: T10000000547
Status: Completed - Case Closed
Status Date: 07/12/2017

LOS ANGELES CO. HMS:
Region: LA
Permit Category: Not reported
Facility Id: 007226-026907
Facility Type: Not reported
Facility Status: OPEN
Area: 3S
Permit Number: Not reported
Permit Status: Not reported

Region: LA
Permit Category: T
Facility Id: 007226-052524
Facility Type: 0
Facility Status: Permit
Area: 3S
Permit Number: 000606969
Permit Status: Permit

Region: LA
Permit Category: I
Facility Id: 007226-I07564
Facility Type: 01
Facility Status: Closed
Area: 3S
Permit Number: 000012373
Permit Status: Closed

I52 **SAN GABRIEL VALLEY CORP CAMPUS** **UST** **U004265710**
NNE **4910 RIVERGRADE RD.** **N/A**
1/8-1/4 **IRWINDALE, CA 91706**
0.162 mi.
853 ft. **Site 5 of 8 in cluster I**

Relative:
Higher

Actual:
369 ft.

UST:
Facility ID: LACoFA0031623
Permitting Agency: Los Angeles County Fire Department
Latitude: 34.10067
Longitude: -117.98203

I53 NNE 1/8-1/4 0.173 mi. 913 ft. | **SAN GABRIEL VALLEY CORP CAMPUS** | **UST** | **U004265713**
4920 RIVERGRADE RD | **N/A**
IRWINDALE, CA 91706

Site 6 of 8 in cluster I

Relative: Higher
Actual: 370 ft.

UST:

Facility ID:	LACoFA0032229
Permitting Agency:	Los Angeles County Fire Department
Latitude:	34.10004
Longitude:	-117.98123

I54 NNE 1/8-1/4 0.180 mi. 952 ft. | **AGERE SYSTEMS** | **LUST** | **S106024779**
4920 N RIVERGRADE RD | **LOS ANGELES CO. HMS** | **N/A**
IRWINDALE, CA 91706

Site 7 of 8 in cluster I

Relative: Higher
Actual: 370 ft.

LUST:

Lead Agency:	LOS ANGELES COUNTY
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL0603749444
Global Id:	SL0603749444
Latitude:	34.101437
Longitude:	-117.980864
Status:	Completed - Case Closed
Status Date:	08/16/2011
Case Worker:	KBR
RB Case Number:	Not reported
Local Agency:	LOS ANGELES COUNTY
File Location:	Local Agency
Local Case Number:	023804-038888
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

LUST:

Global Id:	SL0603749444
Contact Type:	Local Agency Caseworker
Contact Name:	KATTYA BATRES RINZE
Organization Name:	LOS ANGELES COUNTY
Address:	900 SOUTH FREMONT AVE
City:	ALHAMBRA
Email:	gbatres@dpw.lacounty.gov
Phone Number:	Not reported

Global Id:	SL0603749444
Contact Type:	Regional Board Caseworker
Contact Name:	YUE RONG
Organization Name:	LOS ANGELES RWQCB (REGION 4)
Address:	320 W. 4TH ST., SUITE 200
City:	Los Angeles
Email:	yrong@waterboards.ca.gov
Phone Number:	Not reported

LUST:

Global Id:	SL0603749444
Action Type:	Other
Date:	09/06/2007
Action:	Leak Reported

AGERE SYSTEMS (Continued) **S106024779**

Global Id: SL0603749444
Action Type: ENFORCEMENT
Date: 08/16/2011
Action: Closure/No Further Action Letter - #c000680344

Global Id: SL0603749444
Action Type: Other
Date: 12/20/2006
Action: Leak Discovery

LUST:
Global Id: SL0603749444
Status: Open - Case Begin Date
Status Date: 12/20/2006

Global Id: SL0603749444
Status: Open - Site Assessment
Status Date: 09/06/2007

Global Id: SL0603749444
Status: Completed - Case Closed
Status Date: 08/16/2011

LOS ANGELES CO. HMS:
Region: LA
Permit Category: I
Facility Id: 023804-033124
Facility Type: 01
Facility Status: Closed
Area: 3S
Permit Number: 000015712
Permit Status: Closed

Region: LA
Permit Category: T
Facility Id: 023804-055081
Facility Type: 0
Facility Status: Permit
Area: 3S
Permit Number: 000712128
Permit Status: Permit

Region: LA
Permit Category: I
Facility Id: 023804-055475
Facility Type: 01
Facility Status: Permit
Area: 3S
Permit Number: 000680279
Permit Status: Permit

I55 NNE 1/8-1/4 0.180 mi. 952 ft.	**AGERE SYSTEMS/ LSI CORPORATION 4920 RIVERGRADE ROAD IRVINDALE, CA 91706**	**RCRA-CESQG**	**1004676630 CAR000087627**

Site 8 of 8 in cluster I

Relative: Higher

Actual: 370 ft.

RCRA-CESQG:

Date form received by agency:	09/11/2008
Facility name:	AGERE SYSTEMS/ LSI CORPORATION
Facility address:	4920 RIVERGRADE ROAD IRVINDALE, CA 91706
EPA ID:	CAR000087627
Mailing address:	1110 AMERICAN PARKWAY NE ALLENTOWN, PA 18109
Contact:	SCOTT D HOUGHUYSEN
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	610-712-1647
Contact email:	SCOTT.HOUTHUYSEN@LSR.COM
EPA Region:	09
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	METLIFE REAL ESTATE INVESTMENTS
Owner/operator address:	333 S HOPE ST STE 3650 LOS ANGELES, CA 90071
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	08/01/1990
Owner/Op end date:	Not reported
Owner/operator name:	LSI CORPORATION
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported

AGERE SYSTEMS/ LSI CORPORATION (Continued) **1004676630**

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 04/02/2007
Owner/Op end date: Not reported

Owner/operator name: AGERE SYSTEMS
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/1999
Owner/Op end date: Not reported

Owner/operator name: WASHING MUTUAL BANK FA
Owner/operator address: 1201 THIRD AVENUE
SEATTLE, WA 98101
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1999
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

AGERE SYSTEMS/ LSI CORPORATION (Continued) **1004676630**

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

Historical Generators:
Date form received by agency: 09/27/2007
Site name: LSI CORPORATION
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/26/2002
Site name: LUCENT TECHNOLOGIES
Classification: Small Quantity Generator

AGERE SYSTEMS/ LSI CORPORATION (Continued) **1004676630**

Date form received by agency: 02/26/2002
Site name: LUCENT TECHNOLOGIES
Classification: Large Quantity Generator

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 212
. Waste name: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

. Waste code: 741
. Waste name: Liquids with halogenated organic compounds > 1000 mg/l

. Waste code: 792
. Waste name: Liquids with pH < 2 with metals

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL

AGERE SYSTEMS/ LSI CORPORATION (Continued) **1004676630**

ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 12/04/2000
Site name: LUCENT TECHNOLOGIES
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.

. Waste code: D002
. Waste name: A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.

. Waste code: D003
. Waste name: A MATERIAL IS CONSIDERED TO BE A REACTIVE HAZARDOUS WASTE IF IT IS NORMALLY UNSTABLE, REACTS VIOLENTLY WITH WATER, GENERATES TOXIC GASES WHEN EXPOSED TO WATER OR CORROSIVE MATERIALS, OR IF IT IS CAPABLE OF DETONATION OR EXPLOSION WHEN EXPOSED TO HEAT OR A FLAME. ONE EXAMPLE OF SUCH WASTE WOULD BY WASTE GUNPOWDER.

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D009
. Waste name: MERCURY

AGERE SYSTEMS/ LSI CORPORATION (Continued) **1004676630**

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2-TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE LISTED IN F001, F004, OR F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

J56 **DURBIN LANDFILL** **SWF/LF** **S109036003**
WSW **13000 LOS ANGELES STREET** **CHMIRS** **N/A**
1/8-1/4 **IRWINDALE, CA 91706** **LDS**
0.239 mi. **ENF**
1262 ft. **Site 1 of 6 in cluster J** **CIWQS**

Relative:
Lower

Actual:
322 ft.

SWF/LF (SWIS):

Region:	STATE
Facility ID:	19-AA-1111
Lat/Long:	34.08486 / -117.98869
Owner Name:	Calmat Co. dba Vulcan Materials Co.-West
Owner Telephone:	6025288944
Owner Address:	Dan R. Zeller
Owner Address2:	3200 San Fernando Rd.
Owner City,St,Zip:	Los Angeles, CA 90065
Operational Status:	Active
Operator:	Calmat Co. dba Vulcan Materials Co.-West
Operator Phone:	6025288944
Operator Address:	Dan R. Zeller
Operator Address2:	3200 San Fernando Rd.
Operator City,St,Zip:	Los Angeles, CA 90065
Permit Date:	01/12/2009
Permit Status:	Notification
Permitted Acreage:	$110.00
Activity:	Inert Debris ENG Fill Operation

DURBIN LANDFILL (Continued) **S109036003**

Regulation Status:	Notification
Landuse Name:	Residential,Commercial
GIS Source:	Map
Category:	Disposal
Unit Number:	01
Inspection Frequency:	Quarterly
Accepted Waste:	Inert
Closure Date:	12/31/2034
Closure Type:	Estimated
Disposal Acreage:	$0.00
SWIS Num:	19-AA-1111
Waste Discharge Requirement Num:	Not reported
Program Type:	Not reported
Permitted Throughput with Units:	4000
Actual Throughput with Units:	Tons/day
Permitted Capacity with Units:	1248000
Remaining Capacity:	Not reported
Remaining Capacity with Units:	Tons/year
Lat/Long:	34.08486 / -117.98869

LOS ANGELES CO. LF:

Site ID:	1804
Alt. Address:	Not reported
Site Contact:	Not reported
Site Contact Phone:	(818) 922-8841
Site Email:	penaj@vmcmail.com
Site Website:	Not reported
Site Type:	Inert Debris Engineered Fill Operation
Site SWIS Number:	19-AA-1111
Beginning Operation Date:	Not reported
Ending Operation Date:	Not reported
Local Enforcement Agency:	Not reported
Maximun Depth Fill(Ft):	Not reported
Permitted Capacity:	Not reported
Present Use:	Not reported
Remaining Capacity(Million):	Not reported
Status:	Active
Waste Accepted:	Inert;
Hours of Operation:	Not reported
Disposal Area (Acre):	Not reported

Detail As Of 01/2014:

Operator Name:	Vulcan Materials Company
Operator Address:	2526 E. University Drive
Operator City/State/Zip:	Phoenix, AZ 85034
Operator Contact:	Dan Zeller
Operator Telephone:	Not reported
Operator Email:	Not reported
Owner Name:	Vulcan Materials Company
Owner Address:	3200 SAN FERNANDO ROAD
Owner City/State/Zip:	LOS ANGELES, CA 91706
Owner Contact:	Bill Bennett (Western Division)
Owner Telephone:	Not reported
Owner Email:	Not reported

CHMIRS:

OES Incident Number:	08-6488

DURBIN LANDFILL (Continued) **S109036003**

OES notification:	09/05/2008
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Yes
Waterway:	Unnamed
Spill Site:	Other
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	0206
Year:	2008
Agency:	Vulcan Materials - Derbin Plant
Incident Date:	9/5/2008
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Unnamed
E Date:	Not reported
Substance:	Chevron Tellus 46 Hydraulic Oil
Quantity Released:	15
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported

DURBIN LANDFILL (Continued) **S109036003**

#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	RP states that a hydraulic filter failed causing the release of hydraulic fluid into an unnamed body of water in the rock quarry.
OES Incident Number:	7-0395
OES notification:	01/18/2007
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	Not reported
Waterway:	Not reported
Spill Site:	Not reported
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Not reported
Other:	Not reported
Date/Time:	Not reported
Year:	2007
Agency:	Vulcan Materials Co
Incident Date:	1/10/2007 12:00:00 AM
Admin Agency:	L. A. County Fire Prevention
Amount:	Not reported
Contained:	Yes
Site Type:	Other

DURBIN LANDFILL (Continued) **S109036003**

E Date:	Not reported
Substance:	Chevron Clarity Hydraulic Oil AW
Gallons:	400
Unknown:	0
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	0
Number of Injuries:	0
Number of Fatalities:	0
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	While loading a tank onto a barge and a mining pit filled with perched ground water, the load shifted and broke a pipe discharging the contents of the tank.

LDS:

Global Id:	T10000002295
Latitude:	34.08376
Longitude:	-117.9891
Case Type:	Land Disposal Site
Status:	Open - Operating
Status Date:	05/31/2016
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Caseworker:	DAC
Local Agency:	Not reported
RB Case Number:	4B190371001
LOC Case Number:	Not reported
File Location:	Regional Board
Potential Media Affect:	Not reported
EDR Link ID:	T10000002295
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

ENF:

Region:	4
Facility Id:	643055
Agency Name:	Vulcan Materials Company Phoenix
Place Type:	Waste Management Unit
Place Subtype:	Land fill
Facility Type:	Solid Waste Class III - nonhazardous solid wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.086389

DURBIN LANDFILL (Continued) **S109036003**

Place Longitude:	-117.989722
SIC Code 1:	1442
SIC Desc 1:	Construction Sand and Gravel
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Inert solid wastes
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISPOTH
Program Category1:	LNDISP
Program Category2:	LNDISP
# Of Programs:	1
WDID:	4B190371001
Reg Measure Id:	314584
Reg Measure Type:	WDR
Region:	4
Order #:	R4-2006-0078
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	6750
Status:	Active
Status Date:	06/03/2014
Effective Date:	10/24/2006
Expiration/Review Date:	10/24/2021
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	366048
Region:	4
Order / Resolution Number:	NOV

DURBIN LANDFILL (Continued) **S109036003**

Enforcement Action Type:	Notice of Violation
Effective Date:	05/04/2009
Adoption/Issuance Date:	05/04/2009
Achieve Date:	Not reported
Termination Date:	05/04/2009
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 5/4/09 for 2 releases of hydraulic oil to exposed groundwater.
Description:	NOV sent 5/4/09 for 2 releases of hydraulic oil to exposed groundwater in violation of WDR Prohibition B.1.
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	$0.00
Initial Assessed Amount:	$0.00
Liability $ Amount:	$0.00
Project $ Amount:	$0.00
Liability $ Paid:	$0.00
Project $ Completed:	$0.00
Total $ Paid/Completed Amount:	$0.00

Region:	4
Facility Id:	643055
Agency Name:	Vulcan Materials Company Phoenix
Place Type:	Waste Management Unit
Place Subtype:	Land fill
Facility Type:	Solid Waste Class III - nonhazardous solid wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.086389
Place Longitude:	-117.989722
SIC Code 1:	1442
SIC Desc 1:	Construction Sand and Gravel
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Inert solid wastes
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISPOTH
Program Category1:	LNDISP

DURBIN LANDFILL (Continued) **S109036003**

Program Category2:	LNDISP
# Of Programs:	1
WDID:	4B190371001
Reg Measure Id:	314584
Reg Measure Type:	WDR
Region:	4
Order #:	R4-2006-0078
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	6750
Status:	Active
Status Date:	06/03/2014
Effective Date:	10/24/2006
Expiration/Review Date:	10/24/2021
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	352770
Region:	4
Order / Resolution Number:	13267 Letter
Enforcement Action Type:	13267 Letter
Effective Date:	09/15/2008
Adoption/Issuance Date:	09/15/2008
Achieve Date:	Not reported
Termination Date:	09/15/2008
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	13267 Letter sent 9/15/08 for inadequate report of 8/7/08 hydraulic oil spill.
Description:	13267 Letter sent 9/15/08 for inadequate report of 8/7/08 hydraulic oil spill.
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	$0.00
Initial Assessed Amount:	$0.00
Liability $ Amount:	$0.00
Project $ Amount:	$0.00
Liability $ Paid:	$0.00
Project $ Completed:	$0.00
Total $ Paid/Completed Amount:	$0.00
Region:	4
Facility Id:	643055

DURBIN LANDFILL (Continued) **S109036003**

Agency Name:	Vulcan Materials Company Phoenix
Place Type:	Waste Management Unit
Place Subtype:	Land fill
Facility Type:	Solid Waste Class III - nonhazardous solid wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.086389
Place Longitude:	-117.989722
SIC Code 1:	1442
SIC Desc 1:	Construction Sand and Gravel
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Inert solid wastes
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISPOTH
Program Category1:	LNDISP
Program Category2:	LNDISP
# Of Programs:	1
WDID:	4B190371001
Reg Measure Id:	314584
Reg Measure Type:	WDR
Region:	4
Order #:	R4-2006-0078
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	6750
Status:	Active
Status Date:	06/03/2014
Effective Date:	10/24/2006
Expiration/Review Date:	10/24/2021
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported

DURBIN LANDFILL (Continued) **S109036003**

Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	352763
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	09/15/2008
Adoption/Issuance Date:	09/15/2008
Achieve Date:	Not reported
Termination Date:	09/15/2008
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 9/15/08 for 55-gal hydraulic oil spill on 8/7/08.
Description:	NOV sent 9/15/08 for 55-gal hydraulic oil spill into groundwater on 8/7/08.
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	$0.00
Initial Assessed Amount:	$0.00
Liability $ Amount:	$0.00
Project $ Amount:	$0.00
Liability $ Paid:	$0.00
Project $ Completed:	$0.00
Total $ Paid/Completed Amount:	$0.00

Region:	4
Facility Id:	643055
Agency Name:	Vulcan Materials Company Phoenix
Place Type:	Waste Management Unit
Place Subtype:	Land fill
Facility Type:	Solid Waste Class III - nonhazardous solid wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.086389
Place Longitude:	-117.989722
SIC Code 1:	1442
SIC Desc 1:	Construction Sand and Gravel
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW

DURBIN LANDFILL (Continued) **S109036003**

Facility Waste Type:	Inert solid wastes
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISPOTH
Program Category1:	LNDISP
Program Category2:	LNDISP
# Of Programs:	1
WDID:	4B190371001
Reg Measure Id:	314584
Reg Measure Type:	WDR
Region:	4
Order #:	R4-2006-0078
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	6750
Status:	Active
Status Date:	06/03/2014
Effective Date:	10/24/2006
Expiration/Review Date:	10/24/2021
Termination Date:	Not reported
WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	352255
Region:	4
Order / Resolution Number:	State AG - BC 394806
Enforcement Action Type:	Settlement - Court Order
Effective Date:	07/18/2008
Adoption/Issuance Date:	07/18/2008
Achieve Date:	Not reported
Termination Date:	08/11/2008
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	Final Stipulated Judgement of $7,000 issued 7/18/08 by State Attorney General.
Description:	Final Stipulated Judgement of $7,000 issued 7/18/08 by State Attorney General for 400 gallon oil spill on 1/10/07.
Program:	LNDISP
Latest Milestone Completion Date:	2008-08-11
# Of Programs1:	1
Total Assessment Amount:	$7,000.00
Initial Assessed Amount:	$7,000.00
Liability $ Amount:	$7,000.00
Project $ Amount:	$0.00

DURBIN LANDFILL (Continued) **S109036003**

Liability $ Paid:	$7,000.00
Project $ Completed:	$0.00
Total $ Paid/Completed Amount:	$7,000.00
Region:	4
Facility Id:	643055
Agency Name:	Vulcan Materials Company Phoenix
Place Type:	Waste Management Unit
Place Subtype:	Land fill
Facility Type:	Solid Waste Class III - nonhazardous solid wastes
Agency Type:	Privately-Owned Business
# Of Agencies:	1
Place Latitude:	34.086389
Place Longitude:	-117.989722
SIC Code 1:	1442
SIC Desc 1:	Construction Sand and Gravel
SIC Code 2:	Not reported
SIC Desc 2:	Not reported
SIC Code 3:	Not reported
SIC Desc 3:	Not reported
NAICS Code 1:	Not reported
NAICS Desc 1:	Not reported
NAICS Code 2:	Not reported
NAICS Desc 2:	Not reported
NAICS Code 3:	Not reported
NAICS Desc 3:	Not reported
# Of Places:	1
Source Of Facility:	Reg Meas
Design Flow:	Not reported
Threat To Water Quality:	3
Complexity:	C
Pretreatment:	X - Facility is not a POTW
Facility Waste Type:	Inert solid wastes
Facility Waste Type 2:	Not reported
Facility Waste Type 3:	Not reported
Facility Waste Type 4:	Not reported
Program:	LNDISPOTH
Program Category1:	LNDISP
Program Category2:	LNDISP
# Of Programs:	1
WDID:	4B190371001
Reg Measure Id:	314584
Reg Measure Type:	WDR
Region:	4
Order #:	R4-2006-0078
Npdes# CA#:	Not reported
Major-Minor:	Not reported
Npdes Type:	Not reported
Reclamation:	N - No
Dredge Fill Fee:	Not reported
301H:	Not reported
Application Fee Amt Received:	6750
Status:	Active
Status Date:	06/03/2014
Effective Date:	10/24/2006
Expiration/Review Date:	10/24/2021
Termination Date:	Not reported

DURBIN LANDFILL (Continued) **S109036003**

WDR Review - Amend:	Not reported
WDR Review - Revise/Renew:	Not reported
WDR Review - Rescind:	Not reported
WDR Review - No Action Required:	Not reported
WDR Review - Pending:	Not reported
WDR Review - Planned:	Not reported
Status Enrollee:	N
Individual/General:	I
Fee Code:	59 - Land Disposal Site not paying tipping fee
Direction/Voice:	Passive
Enforcement Id(EID):	341590
Region:	4
Order / Resolution Number:	NOV
Enforcement Action Type:	Notice of Violation
Effective Date:	01/30/2008
Adoption/Issuance Date:	01/30/2008
Achieve Date:	Not reported
Termination Date:	01/30/2008
ACL Issuance Date:	Not reported
EPL Issuance Date:	Not reported
Status:	Historical
Title:	NOV sent 1/30/08 for violation of WDR R4-2006-0078 for 1/10/07 oil spill.
Description:	NOV sent 1/30/08 for violation of WDR R4-2006-0078 & reporting requirements for spill of 400 gallons of hydraulic oil that entered the lake of exposed groundwater at the site on 1/10/07.
Program:	LNDISP
Latest Milestone Completion Date:	Not reported
# Of Programs1:	1
Total Assessment Amount:	$0.00
Initial Assessed Amount:	$0.00
Liability $ Amount:	$0.00
Project $ Amount:	$0.00
Liability $ Paid:	$0.00
Project $ Completed:	$0.00
Total $ Paid/Completed Amount:	$0.00

CIWQS:

Agency:	Vulcan Materials Company Phoenix
Agency Address:	2526 East University Drive, Phoenix, AZ 85254
Place/Project Type:	Land fill
SIC/NAICS:	1442
Region:	4
Program:	LNDISPOTH
Regulatory Measure Status:	Active
Regulatory Measure Type:	WDR
Order Number:	R4-2006-0078
WDID:	4B190371001
NPDES Number:	Not reported
Adoption Date:	10/24/2006
Effective Date:	10/24/2006
Termination Date:	Not reported
Expiration/Review Date:	10/24/2021
Design Flow:	Not reported
Major/Minor:	Not reported
Complexity:	C

DURBIN LANDFILL (Continued) **S109036003**

TTWQ:	3
Enforcement Actions within 5 years:	0
Violations within 5 years:	0
Latitude:	34.086389
Longitude:	-117.989722

J57 **DURBIN** **HIST UST** **S113010287**
WSW **13000 EAST LOS ANGELES ST** **HAZNET** **N/A**
1/8-1/4 **IRWINDALE, CA 91706**
0.239 mi.
1262 ft. **Site 2 of 6 in cluster J**

Relative:
Lower

Actual:
322 ft.

HIST UST:

File Number:	00026A16
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00026A16.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

HAZNET:

envid:	S113010287
Year:	2016
GEPAID:	CAD981686405
Contact:	ABBEY SANDERSON
Telephone:	8585309441
Mailing Name:	Not reported
Mailing Address:	7220 TRADE ST
Mailing City,St,Zip:	SAN DIEGO, CA 921212326
Gen County:	Los Angeles
TSD EPA ID:	CAD097030993
TSD County:	Los Angeles
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	1.35
Cat Decode:	Other organic solids
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Los Angeles

DURBIN (Continued) **S113010287**

envid: S113010287
Year: 2016
GEPAID: CAD981686405
Contact: ABBEY SANDERSON
Telephone: 8585309441
Mailing Name: Not reported
Mailing Address: 7220 TRADE ST
Mailing City,St,Zip: SAN DIEGO, CA 921212326
Gen County: Los Angeles
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.051
Cat Decode: Unspecified organic liquid mixture
Method Decode: Fuel Blending Prior To Energy Recovery At Another Site
Facility County: Los Angeles

envid: S113010287
Year: 2016
GEPAID: CAD981686405
Contact: ABBEY SANDERSON
Telephone: 8585309441
Mailing Name: Not reported
Mailing Address: 7220 TRADE ST
Mailing City,St,Zip: SAN DIEGO, CA 921212326
Gen County: Los Angeles
TSD EPA ID: AZR000515924
TSD County: 99
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 2
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: Los Angeles

envid: S113010287
Year: 2015
GEPAID: CAD981686405
Contact: JOHN JANKE
Telephone: 3233129960
Mailing Name: Not reported
Mailing Address: 7220 TRADE ST STE 200
Mailing City,St,Zip: SAN DIEGO, CA 921212326
Gen County: Los Angeles
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 1.35
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

DURBIN (Continued) **S113010287**

envid: S113010287
Year: 2014
GEPAID: CAD981686405
Contact: JOHN JANKE
Telephone: 3233129960
Mailing Name: Not reported
Mailing Address: 7220 TRADE ST STE 200
Mailing City,St,Zip: SAN DIEGO, CA 921212326
Gen County: Los Angeles
TSD EPA ID: CAT080013352
TSD County: Los Angeles
Waste Category: Unspecified organic liquid mixture
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.1
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Los Angeles

Click this hyperlink while viewing on your computer to access
107 additional CA_HAZNET: record(s) in the EDR Site Report.

J58 **CALMAT COMPANY** **SWEEPS UST** **S103627749**
WSW **13000 LOS ANGELES ST** **EMI** **N/A**
1/8-1/4 **IRWINDALE, CA 91706**
0.239 mi.
1262 ft. **Site 3 of 6 in cluster J**

Relative:
Lower

Actual:
322 ft.

SWEEPS UST:
Status: Active
Comp Number: 378
Number: 9
Board Of Equalization: 44-007439
Referral Date: 06-30-89
Action Date: Not reported
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-000378-000001
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN
STG: W
Content: Not reported
Number Of Tanks: 3

Status: Active
Comp Number: 378
Number: 9
Board Of Equalization: 44-007439
Referral Date: 06-30-89
Action Date: Not reported
Created Date: 06-30-89
Owner Tank Id: Not reported
SWRCB Tank Id: 19-000-000378-000002
Tank Status: A
Capacity: Not reported
Active Date: 06-30-89
Tank Use: UNKNOWN

CALMAT COMPANY (Continued) **S103627749**

STG:	W
Content:	Not reported
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	378
Number:	9
Board Of Equalization:	44-007439
Referral Date:	06-30-89
Action Date:	Not reported
Created Date:	06-30-89
Owner Tank Id:	Not reported
SWRCB Tank Id:	19-000-000378-000003
Tank Status:	A
Capacity:	Not reported
Active Date:	06-30-89
Tank Use:	UNKNOWN
STG:	W
Content:	Not reported
Number Of Tanks:	Not reported

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	1442
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	26
Part. Matter 10 Micrometers and Smllr Tons/Yr:	13

Year:	1993
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	1442
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	13
Part. Matter 10 Micrometers and Smllr Tons/Yr:	7

Year:	1995

CALMAT COMPANY (Continued) **S103627749**

County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	1442
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	13
Part. Matter 10 Micrometers and Smllr Tons/Yr:	7

Year:	1996
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	1442
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	2
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1

Year:	2006
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	1442
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0031645569620253164
Reactive Organic Gases Tons/Yr:	.003
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	39.91
Part. Matter 10 Micrometers and Smllr Tons/Yr:	24.186796

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	1442
Air District Name:	SOUTH COAST AQMD

CALMAT COMPANY (Continued) **S103627749**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0031645569620253164
Reactive Organic Gases Tons/Yr:	.003
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	39.91
Part. Matter 10 Micrometers and Smllr Tons/Yr:	24.186796

Year:	2008
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0020609151898734177
Reactive Organic Gases Tons/Yr:	.0019537476
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	31.93
Part. Matter 10 Micrometers and Smllr Tons/Yr:	15.965

Year:	2009
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.0864978902953501E-3
Reactive Organic Gases Tons/Yr:	1.0300000000000001E-3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	12.84
Part. Matter 10 Micrometers and Smllr Tons/Yr:	6.4199999999999999

Year:	2010
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.00135021097046413
Reactive Organic Gases Tons/Yr:	1.2800000000000001E-3
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

CALMAT COMPANY (Continued) **S103627749**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	5.0483900000000004
Part. Matter 10 Micrometers and Smllr Tons/Yr:	2.5241950000000002

Year:	2011
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.1
Reactive Organic Gases Tons/Yr:	0.0948
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	7.08123
Part. Matter 10 Micrometers and Smllr Tons/Yr:	3.540615

Year:	2012
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.2645464135
Reactive Organic Gases Tons/Yr:	0.25079
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	19.07977
Part. Matter 10 Micrometers and Smllr Tons/Yr:	9.539885

Year:	2013
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.0010548523207
Reactive Organic Gases Tons/Yr:	0.001
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	13.96834
Part. Matter 10 Micrometers and Smllr Tons/Yr:	6.98417

Year:	2014
County Code:	19

CALMAT COMPANY (Continued) **S103627749**

Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.0016287878788
Reactive Organic Gases Tons/Yr:	0.00129
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	7.11366
Part. Matter 10 Micrometers and Smllr Tons/Yr:	1.948346

Year:	2015
County Code:	19
Air Basin:	SC
Facility ID:	1865
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.0048821464646
Reactive Organic Gases Tons/Yr:	0.00386666
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	34.557703414
Part. Matter 10 Micrometers and Smllr Tons/Yr:	6.768251707

J59 **CALIFORNIA PORTLAND CEMENT CO** **AST** **S104537619**
WSW **13000 E LOS ANGELES ST** **EMI** **N/A**
1/8-1/4 **IRWINDALE, CA 91706** **LOS ANGELES CO. HMS**
0.239 mi.
1262 ft. **Site 4 of 6 in cluster J**

Relative:
Lower

Actual:
322 ft.

AST:

Certified Unified Program Agencies:	Not reported
Owner:	Calmat Co. dba Vulcan Materials Co.
Total Gallons:	Not reported
CERSID:	10285498
Facility ID:	LACoFA0016627
Business Name:	CalMat Co. DBA Vulcan Materials Company
Phone:	(626) 856-6151
Fax:	Not reported
Mailing Address:	500 N. Brand Blvd., Suite 500
Mailing Address City:	Glendale
Mailing Address State:	CA
Mailing Address Zip Code:	91203
Operator Name:	BRIAN OUELLETTE
Operator Phone:	(626)712-3629
Owner Phone:	(818) 553-8938
Owner Mail Address:	500 N. Brand Blvd., Suite 500
Owner State:	CA
Owner Zip Code:	91203
Owner Country:	United States

CALIFORNIA PORTLAND CEMENT CO (Continued) **S104537619**

Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	CAD981686405

EMI:

Year:	2002
County Code:	19
Air Basin:	SC
Facility ID:	62648
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2003
County Code:	19
Air Basin:	SC
Facility ID:	62648
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

Year:	2004
County Code:	19
Air Basin:	SC
Facility ID:	62648
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0

CALIFORNIA PORTLAND CEMENT CO (Continued) **S104537619**

SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0.23384
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.02

Year:	2006
County Code:	19
Air Basin:	SC
Facility ID:	62648
Air District Name:	SC
SIC Code:	3273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	3.496
Part. Matter 10 Micrometers and Smllr Tons/Yr:	3.1951

Year:	2007
County Code:	19
Air Basin:	SC
Facility ID:	62648
Air District Name:	SC
SIC Code:	3273
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	3.496
Part. Matter 10 Micrometers and Smllr Tons/Yr:	3.1951

LOS ANGELES CO. HMS:

Region:	LA
Permit Category:	I
Facility Id:	000376-020264
Facility Type:	05
Facility Status:	Closed
Area:	3S
Permit Number:	000153138
Permit Status:	Closed

J60 WSW 1/8-1/4 0.239 mi. 1262 ft. | **INDUSTRIAL ASPHALT, HUNTSEAL**
13000 LOS ANGELES ST
IRWINDALE, CA 91706 | **HIST UST EMI WDS** | **U001568744 N/A**

Site 5 of 6 in cluster J

Relative: Lower

Actual: 322 ft.

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000004818
Facility Type:	Other
Other Type:	SAND & GRAVEL PLANT
Contact Name:	Not reported
Telephone:	2132582777
Owner Name:	CALMAT CO FORMERLY CONROCK CO
Owner Address:	3200 SAN FERNANDO RD
Owner City,St,Zip:	LOS ANGELES, CA 90065
Total Tanks:	0003
Tank Num:	001
Container Num:	1
Year Installed:	1983
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	None
Tank Num:	002
Container Num:	2
Year Installed:	1983
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	None
Tank Num:	003
Container Num:	3
Year Installed:	1983
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	None

EMI:

Year:	1990
County Code:	19
Air Basin:	SC
Facility ID:	35418
Air District Name:	SC
SIC Code:	2951
Air District Name:	SOUTH COAST AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0

INDUSTRIAL ASPHALT, HUNTSEAL (Continued) **U001568744**

Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	1
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

WDS:

Facility ID:	4 19I002245
Facility Type:	Other - Does not fall into the category of Municipal/Domestic, Industrial, Agricultural or Solid Waste (Class I, II or III)
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	4
Facility Telephone:	Not reported
Facility Contact:	Not reported
Agency Name:	CALMAT CO.
Agency Address:	Not reported
Agency City,St,Zip:	0
Agency Contact:	Not reported
Agency Telephone:	Not reported
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity:	Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

J61
WSW
1/8-1/4
0.239 mi.
1262 ft.

13000 LOS ANGELES ST
IRWINDALE, CA

Site 6 of 6 in cluster J

AST **A100344471**
N/A

Relative:
Lower

Actual:
322 ft.

AST:

Certified Unified Program Agencies:	Los Angeles County
Owner:	VULCAN MATERIALS
Total Gallons:	3702
CERSID:	Not reported
Facility ID:	Not reported
Business Name:	Not reported
Phone:	Not reported
Fax:	Not reported
Mailing Address:	Not reported
Mailing Address City:	Not reported
Mailing Address State:	Not reported
Mailing Address Zip Code:	Not reported
Operator Name:	Not reported
Operator Phone:	Not reported
Owner Phone:	Not reported
Owner Mail Address:	Not reported
Owner State:	Not reported
Owner Zip Code:	Not reported
Owner Country:	Not reported
Property Owner Name:	Not reported
Property Owner Phone:	Not reported
Property Owner Mailing Address:	Not reported
Property Owner City:	Not reported
Property Owner Stat :	Not reported
Property Owner Zip Code:	Not reported
Property Owner Country:	Not reported
EPAID:	Not reported

62
NE
1/4-1/2
0.375 mi.
1979 ft.

OLIVE AND CENTER YARD (LVTO)
4769 CENTER AVENUE
BALDWIN PARK, CA

SWF/LF **S105964550**
N/A

Relative:
Higher

Actual:
375 ft.

SWF/LF (SWIS):

Region:	STATE
Facility ID:	19-AA-1056
Lat/Long:	34.09922 / -117.97877
Owner Name:	City of Baldwin Park
Owner Telephone:	6269603939
Owner Address:	Wendy harris
Owner Address2:	13135 East garvey Avenue
Owner City,St,Zip:	Baldwin Park, CA 91706
Operational Status:	Active
Operator:	City of Baldwin Park
Operator Phone:	6269603939
Operator Address:	Wendy harris
Operator Address2:	13135 East garvey Avenue
Operator City,St,Zip:	Baldwin Park, CA 91706
Permit Date:	09/03/2003
Permit Status:	Notification
Permitted Acreage:	Not reported
Activity:	Limited Volume Transfer Operation

OLIVE AND CENTER YARD (LVTO) (Continued) **S105964550**

Regulation Status:	Notification
Landuse Name:	Not reported
GIS Source:	Map
Category:	Transfer/Processing
Unit Number:	01
Inspection Frequency:	Quarterly
Accepted Waste:	Green Materials,Mixed municipal
Closure Date:	Not reported
Closure Type:	Not reported
Disposal Acreage:	Not reported
SWIS Num:	19-AA-1056
Waste Discharge Requirement Num:	Not reported
Program Type:	Not reported
Permitted Throughput with Units:	3
Actual Throughput with Units:	Tons/day
Permitted Capacity with Units:	750
Remaining Capacity:	Not reported
Remaining Capacity with Units:	Tons/year
Lat/Long:	34.09922 / -117.97877

63
ESE
1/4-1/2
0.429 mi.
2267 ft.

OSFA ENTERPRISES, INC.
13623 LOS ANGELES ST
BALDWIN PARK, CA 91706

CPS-SLIC **S106484714**
WIP **N/A**

Relative:
Higher

Actual:
361 ft.

CPS-SLIC:

Region:	STATE
Facility Status:	**Open - Inactive**
Status Date:	11/03/2014
Global Id:	SL603798913
Lead Agency:	LOS ANGELES RWQCB (REGION 4)
Lead Agency Case Number:	Not reported
Latitude:	34.092097
Longitude:	-117.977033
Case Type:	Cleanup Program Site
Case Worker:	GJH
Local Agency:	Not reported
RB Case Number:	108.1401
File Location:	Not reported
Potential Media Affected:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Not reported
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

WIP:

Region:	4
File Number:	108.1401
File Status:	**Backlog**
Staff:	UNIDENTIFIED
Facility Suite:	Not reported

64 NNE 1/2-1 0.871 mi. 4601 ft. | **SAN GABRIEL RIVER IMP** | **ENVIROSTOR** | **S107737251** **N/A**

AZUSA, CA

Relative: Higher

Actual: 419 ft.

ENVIROSTOR:

Facility ID:	80000462
Status:	Inactive - Needs Evaluation
Status Date:	07/01/2005
Site Code:	Not reported
Site Type:	Military Evaluation
Site Type Detailed:	FUDS
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	SMBRP
Program Manager:	Not reported
Supervisor:	Douglas Bautista
Division Branch:	Cleanup Cypress
Assembly:	48
Senate:	22
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	DERA
Latitude:	34.10833
Longitude:	-117.975
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	CA99799F561100
Alias Type:	Federal Facility ID
Alias Name:	J09CA0609
Alias Type:	INPR
Alias Name:	80000462
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Inventory Project Report (INPR)
Completed Date:	12/11/1991
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

Count: 1 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
IRWINDALE	S113020857	LOS ANGELES CO SANITATION DISTRICT	LOS ANGELES INT'L MARKETPLACE	91706	HAZNET

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: N/A
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 05/13/2018	Source: EPA
Date Data Arrived at EDR: 05/30/2018	Telephone: N/A
Date Made Active in Reports: 06/22/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 23	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016	Source: Environmental Protection Agency
Date Data Arrived at EDR: 01/05/2017	Telephone: 703-603-8704
Date Made Active in Reports: 04/07/2017	Last EDR Contact: 04/06/2018
Number of Days to Update: 92	Next Scheduled EDR Contact: 07/16/2018
	Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 05/18/2018	Source: EPA
Date Data Arrived at EDR: 05/30/2018	Telephone: 800-424-9346
Date Made Active in Reports: 06/22/2018	Last EDR Contact: 05/30/2018
Number of Days to Update: 23	Next Scheduled EDR Contact: 07/30/2018
	Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 05/18/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 23

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report
CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/16/2018
Date Data Arrived at EDR: 02/22/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 78

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/09/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 02/13/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/16/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 37

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 1: Active Toxic Site Investigation
Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 7

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report

Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/24/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 01/06/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/16/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

CPS-SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 7
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36

Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11

Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Varies

MILITARY UST SITES: Military UST Sites (GEOTRACKER)
Military ust sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/29/2018
Number of Days to Update: 15

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Semi-Annually

UST CLOSURE: Proposed Closure of Underground Storage Tank (UST) Cases
UST cases that are being considered for closure by either the State Water Resources Control Board or the Executive Director have been posted for a 60-day public comment period. UST Case Closures being proposed for consideration by the State Water Resources Control Board. These are primarily UST cases that meet closure criteria under the decisional framework in State Water Board Resolution No. 92-49 and other Board orders. UST Case Closures proposed for consideration by the Executive Director pursuant to State Water Board Resolution No. 2012-0061. These are cases that meet the criteria of the Low-Threat UST Case Closure Policy. UST Case Closure Review Denials and Approved Orders.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 916-327-7844
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69

Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

INDIAN UST R10: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/24/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 01/13/2018
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 134

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/16/2017
Date Data Arrived at EDR: 01/23/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 80

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties
Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/21/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 39

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/22/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 05/04/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 05/11/2018
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Quarterly

CERS HAZ WASTE: CERS HAZ WASTE

List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Hazardous Chemical Management, Hazardous Waste Onsite Treatment, Household Hazardous Waste Collection, Hazardous Waste Generator, and RCRA LQ HW Generator programs.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: CalEPA
Telephone: 916-323-2514
Last EDR Contact: 04/24/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database

A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 02/28/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/28/2018
Number of Days to Update: 27

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 05/22/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database

The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SAN FRANCISCO AST: Aboveground Storage Tank Site Listing

Aboveground storage tank sites

Date of Government Version: 04/19/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Public Health
Telephone: 415-252-3896
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

CA FID UST: Facility Inventory Database

The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CERS TANKS: California Environmental Reporting System (CERS) Tanks
List of sites in the California Environmental Protection Agency (CalEPA) Regulated Site Portal which fall under the Aboveground Petroleum Storage and Underground Storage Tank regulatory programs.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/24/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Quarterly

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 01/28/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 46

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing
Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 73

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/27/2018
Next Scheduled EDR Contact: 07/09/2018
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System
California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 51

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/24/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Semi-Annually

LDS: Land Disposal Sites Listing (GEOTRACKER)
Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)
Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 7

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/28/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/25/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/15/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 87

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/08/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/25/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/09/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/20/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 04/09/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/07/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/04/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/27/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 04/05/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2018
Date Data Arrived at EDR: 04/16/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 74

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 06/28/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 05/13/2018
Date Data Arrived at EDR: 05/30/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 30

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 05/03/2018
Date Data Arrived at EDR: 05/31/2018
Date Made Active in Reports: 06/29/2018
Number of Days to Update: 29

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 87

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/21/2018
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 28

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 04/13/2018
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 06/01/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 02/25/2018
Date Data Arrived at EDR: 03/17/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 03/23/2018
Number of Days to Update: 30

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/23/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan

Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6

Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List

The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 38

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

CUPA LIVERMORE-PLEASANTON: CUPA Facility Listing

list of facilities associated with the various CUPA programs in Livermore-Pleasanton

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 05/07/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 39

Source: Livermore-Pleasanton Fire Department
Telephone: 925-454-2361
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

CUPA SAN FRANCISCO CO: CUPA SAN FRANCISCO CO

Cupa facilities

Date of Government Version: 04/20/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 10

Source: San Francisco County Department of Environmental Health
Telephone: 415-252-3896
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

DRYCLEANERS: Cleaner Facilities

A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 03/27/2018
Date Data Arrived at EDR: 03/29/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 36

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Annually

DRYCLEAN AVAQMD: DRYCLEAN AVAQMD

A listing of dry cleaners in the Antelope Valley Air Quality Management District.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 52

Source: Antelope Valley Air Quality Management District
Telephone: 661-723-8070
Last EDR Contact: 06/22/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

DRYCLEAN SOUTH COAST: DRYCLEAN SOUTH COAST
A listing of dry cleaners in the South Coast Air Quality Management District

Date of Government Version: 03/16/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45

Source: South Coast Air Quality Management District
Telephone: 909-396-3211
Last EDR Contact: 06/11/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 147

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 06/20/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing
A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 54

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
Financial Assurance information

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/20/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 60

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 05/14/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 38

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/09/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data
Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/12/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Annually

ICE: ICE
Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 41

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 05/23/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List
The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/21/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/23/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 04/09/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 69

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 02/27/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 03/14/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 04/19/2018
Number of Days to Update: 45

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 03/23/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 38

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water boards review found that more than one-third of the region's active disposal pits are operating without permission.

Date of Government Version: 04/10/2018
Date Data Arrived at EDR: 04/13/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/13/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9

Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13

Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 06/25/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

MILITARY PRIV SITES: Military Privatized Sites (GEOTRACKER)
Military privatized sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

CERS: CalEPA Regulated Site Portal Data
The CalEPA Regulated Site Portal database combines data about environmentally regulated sites and facilities in California into a single database. It combines data from a variety of state and federal databases, and provides an overview of regulated activities across the spectrum of environmental programs for any given location in California. These activities include hazardous materials and waste, state and federal cleanups, impacted ground and surface waters, and toxic materials

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 44

Source: California Environmental Protection Agency
Telephone: 916-323-2514
Last EDR Contact: 04/24/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

OTHER OIL GAS: OTHER OIL & GAS (GEOTRACKER)
Other Oil & Gas Projects sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

PROD WATER PONDS: PROD WATER PONDS (GEOTRACKER)
Produced water ponds sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

PROJECT: PROJECT (GEOTRACKER)
Projects sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

NON-CASE INFO: NON-CASE INFO (GEOTRACKER)
Non-Case Information sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

SAMPLING POINT: SAMPLING POINT (GEOTRACKER)
Sampling point - public sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

WELL STIM PROJ: WELL SAMP PROJ (GEOTRACKER)
Includes areas of groundwater monitoring plans, a depiction of the monitoring network, and the facilities, boundaries, and subsurface characteristics of the oilfield and the features (oil and gas wells, produced water ponds, UIC wells, water supply wells, etc?) being monitored

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

CIWQS: The California Integrated Water Quality System
The California Integrated Water Quality System (CIWQS) is a computer system used by the State and Regional Water Quality Control Boards to track information about places of environmental interest, manage permits and other orders, track inspections, and manage violations and enforcement activities.

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 60

Source: State Water Resources Control Board
Telephone: 866-794-4977
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

UIC GEO: UIC GEO (GEOTRACKER)
Underground control injection sites

Date of Government Version: 03/12/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 51

Source: State Water Resource Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 65

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/31/2018
Date Data Arrived at EDR: 04/05/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 70

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 05/07/2018
Date Data Arrived at EDR: 05/09/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 36

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 06/25/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 02/26/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 14

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 48

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 04/30/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 04/27/2018
Date Data Arrived at EDR: 05/02/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 44

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 04/25/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/08/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 39

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 04/30/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/05/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 9

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 06/26/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/08/2018
Date Made Active in Reports: 04/30/2018
Number of Days to Update: 53

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/21/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 50

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 72

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 05/30/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 02/02/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/28/2018
Number of Days to Update: 54

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 28

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/09/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 34

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/16/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 49

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206

Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 04/12/2018
Date Data Arrived at EDR: 04/16/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 60

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/16/2018
Date Data Arrived at EDR: 04/17/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 63

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/17/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 05/14/2018
Number of Days to Update: 13

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 04/01/2018
Date Data Arrived at EDR: 04/17/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 63

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/17/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/11/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54

Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/05/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 02/21/2018
Date Data Arrived at EDR: 02/22/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 40

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 03/30/2018
Date Data Arrived at EDR: 04/06/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 28

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/12/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 27

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 03/14/2018
Number of Days to Update: 15

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 05/22/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 03/27/2018
Date Data Arrived at EDR: 03/29/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 18

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 07/02/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/22/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 02/22/2018
Date Data Arrived at EDR: 02/27/2018
Date Made Active in Reports: 03/29/2018
Number of Days to Update: 30

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/22/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 04/24/2018
Date Data Arrived at EDR: 05/01/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 45

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 04/25/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 45

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/07/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 02/07/2018
Date Made Active in Reports: 03/28/2018
Number of Days to Update: 49

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/08/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 03/15/2018
Date Data Arrived at EDR: 03/19/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 46

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/22/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 03/15/2018
Number of Days to Update: 50

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/18/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 04/05/2018
Date Data Arrived at EDR: 04/10/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 24

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 06/18/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 02/02/2018
Date Data Arrived at EDR: 04/04/2018
Date Made Active in Reports: 06/14/2018
Number of Days to Update: 71

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 02/02/2018
Date Data Arrived at EDR: 04/04/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 76

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2018
Next Scheduled EDR Contact: 07/16/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/17/2017
Number of Days to Update: 14

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 04/09/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 69

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 04/06/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 03/05/2018
Date Data Arrived at EDR: 03/07/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 40

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/24/2018
Date Made Active in Reports: 06/19/2018
Number of Days to Update: 56

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

Local Oversight Program Listing
A listing of all LOP release sites that are or were under the County of San Diego's jurisdiction. Included are closed or transferred cases, open cases, and cases that did not have a case type indicated. The cases without a case type are mostly complaints; however, some of them could be LOP cases.

Date of Government Version: 04/18/2018
Date Data Arrived at EDR: 04/23/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 11

Source: Department of Environmental Health
Telephone: 858-505-6874
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24

Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10

Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 03/20/2018
Date Data Arrived at EDR: 03/22/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 43

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 06/14/2018
Next Scheduled EDR Contact: 10/01/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 03/14/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/15/2018
Date Data Arrived at EDR: 03/20/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 45

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 06/06/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28

Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 02/20/2018
Date Data Arrived at EDR: 02/20/2018
Date Made Active in Reports: 03/19/2018
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22

Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13

Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 05/22/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 02/04/2018
Date Data Arrived at EDR: 02/06/2018
Date Made Active in Reports: 03/20/2018
Number of Days to Update: 42

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/16/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 52

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/08/2018
Date Data Arrived at EDR: 03/13/2018
Date Made Active in Reports: 03/29/2018
Number of Days to Update: 16

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/27/2018
Date Made Active in Reports: 04/16/2018
Number of Days to Update: 20

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites
A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 04/03/2018
Date Data Arrived at EDR: 04/06/2018
Date Made Active in Reports: 05/09/2018
Number of Days to Update: 33

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 06/21/2018
Next Scheduled EDR Contact: 10/08/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 05/08/2018
Date Data Arrived at EDR: 05/11/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 35

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 04/16/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 01/08/2018
Date Data Arrived at EDR: 03/01/2018
Date Made Active in Reports: 03/30/2018
Number of Days to Update: 29

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/17/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List
Cupa facilities

Date of Government Version: 01/26/2018
Date Data Arrived at EDR: 02/02/2018
Date Made Active in Reports: 03/21/2018
Number of Days to Update: 47

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 51

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 03/19/2018
Date Data Arrived at EDR: 03/22/2018
Date Made Active in Reports: 04/17/2018
Number of Days to Update: 26

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 07/02/2018
Next Scheduled EDR Contact: 08/20/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 04/23/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/18/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/22/2018
Number of Days to Update: 58

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/23/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 05/09/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 03/26/2018
Date Data Arrived at EDR: 04/25/2018
Date Made Active in Reports: 06/25/2018
Number of Days to Update: 61

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/23/2018
Next Scheduled EDR Contact: 08/06/2018
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 02/28/2018
Date Data Arrived at EDR: 03/14/2018
Date Made Active in Reports: 03/30/2018
Number of Days to Update: 16

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 06/13/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 03/27/2018
Date Data Arrived at EDR: 04/03/2018
Date Made Active in Reports: 05/04/2018
Number of Days to Update: 31

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 06/27/2018
Next Scheduled EDR Contact: 10/15/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 05/10/2018
Date Data Arrived at EDR: 05/15/2018
Date Made Active in Reports: 06/15/2018
Number of Days to Update: 31

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 04/25/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 01/03/2018
Date Data Arrived at EDR: 02/14/2018
Date Made Active in Reports: 03/22/2018
Number of Days to Update: 36

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/18/2018
Next Scheduled EDR Contact: 08/27/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/23/2018
Next Scheduled EDR Contact: 07/23/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 04/30/2018
Date Data Arrived at EDR: 05/03/2018
Date Made Active in Reports: 06/07/2018
Number of Days to Update: 35

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/03/2018
Next Scheduled EDR Contact: 08/13/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/12/2018
Next Scheduled EDR Contact: 07/30/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/21/2018
Next Scheduled EDR Contact: 09/03/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/11/2018
Next Scheduled EDR Contact: 09/24/2018
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

13131 LOS ANGELES STREET
13131 LOS ANGELES STREET
IRWINDALE, CA 91706

TARGET PROPERTY COORDINATES

Latitude (North):	34.094488 - 34˚ 5’ 40.16’’
Longitude (West):	117.985502 - 117˚ 59’ 7.81’’
Universal Tranverse Mercator:	Zone 11
UTM X (Meters):	409088.2
UTM Y (Meters):	3772876.2
Elevation:	355 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5619056 BALDWIN PARK, CA
Version Date:	2012
Southwest Map:	5630799 EL MONTE, CA
Version Date:	2012

EDR’s GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

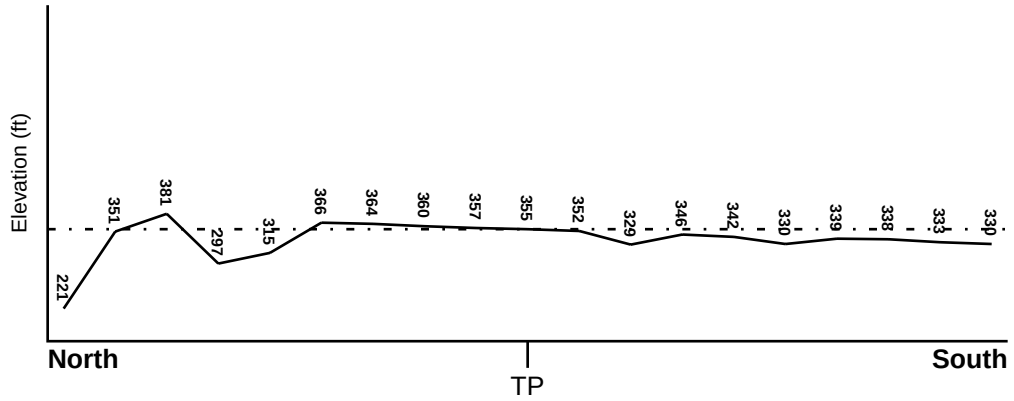
TOPOGRAPHIC INFORMATION

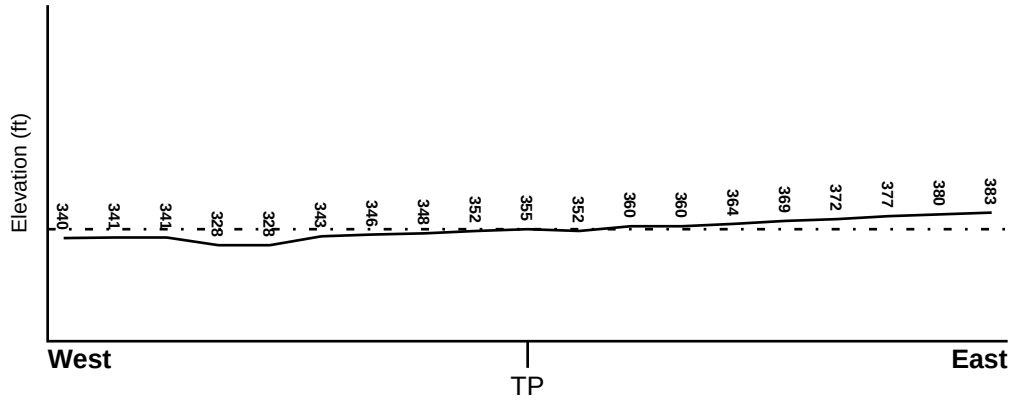
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General SSW

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 355 ft.

0 1/2 1 Miles

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06037C1700F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06037C1675F	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
BALDWIN PARK	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
6	1/2 - 1 Mile ESE	Not Reported
1G	1/2 - 1 Mile ESE	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	URBAN LAND
Soil Surface Texture:	variable
Hydrologic Group:	Not reported
Soil Drainage Class:	Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	Not Reported
Depth to Bedrock Min:	> 10 inches
Depth to Bedrock Max:	> 10 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	6 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: loam
clay
silt loam
loamy sand
sandy loam
fine sand
clay loam
gravelly - sandy loam
coarse sand
gravelly - sand
sand

Surficial Soil Types: loam
clay
silt loam
loamy sand
sandy loam
fine sand
clay loam
gravelly - sandy loam
coarse sand
gravelly - sand
sand

Shallow Soil Types: fine sandy loam
gravelly - loam
sand
silty clay

Deeper Soil Types: stratified
clay loam
silty clay loam
gravelly - sandy loam
coarse sand
sand
weathered bedrock
very fine sandy loam

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A2	USGS40000140996	1/4 - 1/2 Mile ENE
A3	USGS40000140995	1/4 - 1/2 Mile ENE
A4	USGS40000140997	1/4 - 1/2 Mile ENE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

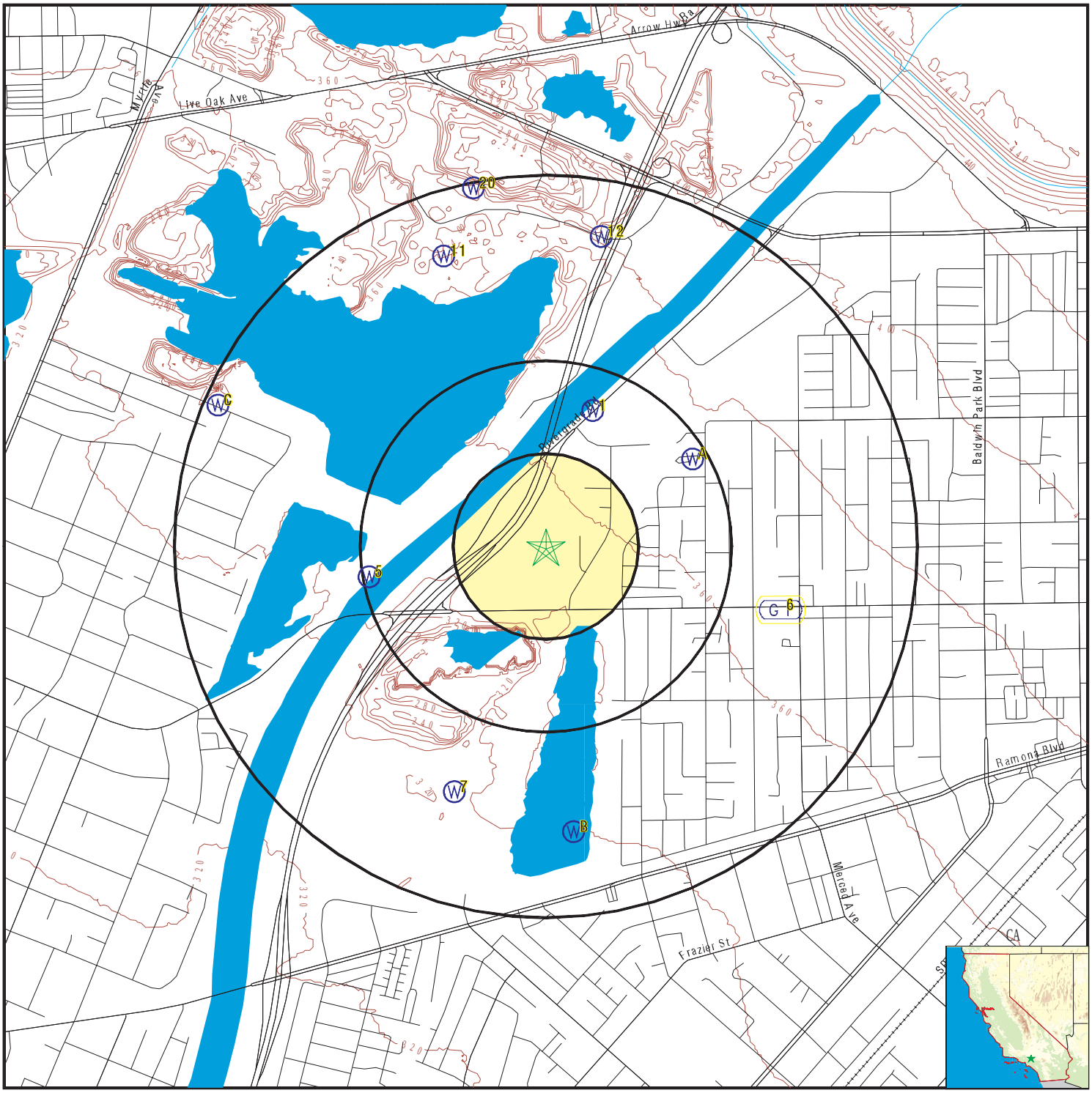
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	CADW60000010437	1/4 - 1/2 Mile NNE
5	CADW60000010438	1/4 - 1/2 Mile West
7	CADW60000005140	1/2 - 1 Mile SSW
B8	1363	1/2 - 1 Mile South
B9	1364	1/2 - 1 Mile South
B10	1365	1/2 - 1 Mile South
11	1362	1/2 - 1 Mile NNW
12	CADW60000005092	1/2 - 1 Mile North
C13	1336	1/2 - 1 Mile WNW
C14	1335	1/2 - 1 Mile WNW
C15	1334	1/2 - 1 Mile WNW
C16	1359	1/2 - 1 Mile WNW
C17	1338	1/2 - 1 Mile WNW
C18	1337	1/2 - 1 Mile WNW
C19	1333	1/2 - 1 Mile WNW
20	CADW60000005093	1/2 - 1 Mile NNW

PHYSICAL SETTING SOURCE MAP - 5351994.2s



County Boundary
Major Roads
Contour Lines
Earthquake Fault Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

Groundwater Flow Direction
Indeterminate Groundwater Flow at Location
Groundwater Flow Varies at Location
Closest Hydrogeological Data
Oil, gas or related wells

SITE NAME: 13131 Los Angeles Street	CLIENT: Leymaster Env. Consulting
ADDRESS: 13131 Los Angeles Street Irwindale CA 91706	CONTACT: Travis Knight INQUIRY #: 5351994.2s
LAT/LONG: 34.094488 / 117.985502	DATE: July 03, 2018 3:06 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
1 **NNE** **1/4 - 1/2 Mile** **Higher**	**CA WELLS**	**CADW60000010437**

Objectid:	10437
Latitude:	34.0998
Longitude:	-117.9833
Site code:	340998N1179833W001
State well numbe:	Not Reported
Local well name:	'USGVMWD-3'
Well use id:	1
Well use descrip:	Observation
County id:	19
County name:	Los Angeles
Basin code:	'4-13'
Basin desc:	San Gabriel Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000010437

A2 **ENE** **1/4 - 1/2 Mile** **Higher**		**FED USGS**	**USGS40000140996**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340552117584002		
Monloc name:	001S001W12J001S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070106	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0977862
Longitude:	-117.9786762	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	600
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

A3 **ENE** **1/4 - 1/2 Mile** **Higher**		**FED USGS**	**USGS40000140995**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340552117584001		
Monloc name:	001S011W12J003S		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18070106	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0977862
Longitude:	-117.9786762	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	Not Reported
Vert measure units:	Not Reported	Vertacc measure val:	Not Reported
Vert accmeasure units:	Not Reported		
Vertcollection method:	Not Reported		
Vert coord refsys:	Not Reported	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	200
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

A4
ENE **FED USGS** **USGS40000140997**
1/4 - 1/2 Mile
Higher

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-340552117584003		
Monloc name:	001S011W12J005S		
Monloc type:	Well		
Monloc desc:	GAMA ULAB SLOW		
Huc code:	18070106	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	34.0981389
Longitude:	-117.9784722	Sourcemap scale:	24000
Horiz Acc measure:	.5	Horiz Acc measure units:	seconds
Horiz Collection method:	Global positioning system (GPS), uncorrected		
Horiz coord refsys:	NAD83	Vert measure val:	370
Vert measure units:	feet	Vertacc measure val:	10
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	1965	Welldepth:	600
Welldepth units:	ft	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 0

Map ID Direction Distance Elevation		Database	EDR ID Number
5 **West** **1/4 - 1/2 Mile** **Lower**		**CA WELLS**	**CADW60000010438**

Objectid:	10438
Latitude:	34.0933
Longitude:	-117.9938
Site code:	340933N1179938W001
State well numbe:	Not Reported
Local well name:	'USGVMWD-4'
Well use id:	1
Well use descrip:	Observation
County id:	19
County name:	Los Angeles
Basin code:	'4-13'
Basin desc:	San Gabriel Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000010438

---

6 **ESE** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	I-12062 Not Reported Not Reported Not Reported 213 09/27/1990	**AQUIFLOW**	**34337**

---

7 **SSW** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**CADW60000005140**

Objectid:	5140
Latitude:	34.0849
Longitude:	-117.9898
Site code:	340849N1179898W001
State well numbe:	Not Reported
Local well name:	'DUR W'
Well use id:	7
Well use descrip:	Other
County id:	19
County name:	Los Angeles
Basin code:	'4-13'
Basin desc:	San Gabriel Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000005140

B8 **South** **1/2 - 1 Mile** **Lower**	**CA WELLS**	**1363**

Water System Information:

Prime Station Code:	01S/11W-12J03 S	User ID:	4TH
FRDS Number:	1910165003	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340500.0 1175900.0	Precision:	Undefined
Source Name:	WELL 03		
System Number:	1910165		
System Name:	VALLEY VIEW MUTUAL WATER CO.		
Organization That Operates System:			
	13730 E LOS ANGELES ST		
	BALDWIN PARK, CA 91706		
Pop Served:	8700	Connections:	1325
Area Served:	BALDWIN PARK		

B9
South **CA WELLS** **1364**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/11W-12J04 S	User ID:	4TH
FRDS Number:	1910165001	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Inactive Raw
Source Lat/Long:	340500.0 1175900.0	Precision:	Undefined
Source Name:	WELL 01 - INACTIVE		
System Number:	1910165		
System Name:	VALLEY VIEW MUTUAL WATER CO.		
Organization That Operates System:			
	13730 E LOS ANGELES ST		
	BALDWIN PARK, CA 91706		
Pop Served:	8700	Connections:	1325
Area Served:	BALDWIN PARK		
Sample Collected:	17-JAN-06	Findings:	20. C
Chemical:	SOURCE TEMPERATURE C		

B10
South **CA WELLS** **1365**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/11W-12J05 S	User ID:	4TH
FRDS Number:	1910165002	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340500.0 1175900.0	Precision:	Undefined
Source Name:	WELL 02		
System Number:	1910165		
System Name:	VALLEY VIEW MUTUAL WATER CO.		
Organization That Operates System:			
	13730 E LOS ANGELES ST		
	BALDWIN PARK, CA 91706		
Pop Served:	8700	Connections:	1325
Area Served:	BALDWIN PARK		

Sample Collected:	07-SEP-17	Findings:	1.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-SEP-17	Findings:	260. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	14-JUN-12	Findings:	2.2 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	13-SEP-12	Findings:	310. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	13-SEP-12	Findings:	6.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-MAY-13	Findings:	490. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	14-MAY-13	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	14-MAY-13	Findings:	5.8 MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	14-MAY-13	Findings:	280. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	14-MAY-13	Findings:	250. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	14-MAY-13	Findings:	75. MG/L
Chemical:	CALCIUM		
Sample Collected:	14-MAY-13	Findings:	15. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	14-MAY-13	Findings:	16. MG/L
Chemical:	SODIUM		
Sample Collected:	14-MAY-13	Findings:	4.3 MG/L
Chemical:	POTASSIUM		
Sample Collected:	14-MAY-13	Findings:	12. MG/L
Chemical:	CHLORIDE		
Sample Collected:	14-MAY-13	Findings:	20. MG/L
Chemical:	SULFATE		
Sample Collected:	14-MAY-13	Findings:	0.27 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	14-MAY-13	Findings:	99. UG/L
Chemical:	ZINC		
Sample Collected:	14-MAY-13	Findings:	290. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	14-MAY-13	Findings:	5.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-SEP-13	Findings:	0.28 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	12-SEP-13	Findings:	150. UG/L
Chemical:	BARIUM		

Sample Collected:	12-SEP-13	Findings:	6.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-SEP-14	Findings:	310. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	08-SEP-14	Findings:	6.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-JUN-15	Findings:	0.592 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	09-JUN-15	Findings:	0.253 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	09-JUN-15	Findings:	9.7e-002 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	09-JUN-15	Findings:	0.47 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	09-JUN-15	Findings:	0.175 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-JUN-15	Findings:	1.e-002 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	01-SEP-15	Findings:	0.68 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-SEP-15	Findings:	280. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	01-SEP-15	Findings:	7.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	28-SEP-15	Findings:	1. UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	28-SEP-15	Findings:	0.95 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-DEC-15	Findings:	1.4 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-MAR-16	Findings:	0.97 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-MAY-16	Findings:	440. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10-MAY-16	Findings:	7.7
Chemical:	PH, LABORATORY		
Sample Collected:	10-MAY-16	Findings:	200. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	10-MAY-16	Findings:	240. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10-MAY-16	Findings:	1.7 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	10-MAY-16	Findings:	210. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		

Sample Collected:	10-MAY-16	Findings:	60. MG/L
Chemical:	CALCIUM		
Sample Collected:	10-MAY-16	Findings:	14. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10-MAY-16	Findings:	14. MG/L
Chemical:	SODIUM		
Sample Collected:	10-MAY-16	Findings:	3.9 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10-MAY-16	Findings:	9.2 MG/L
Chemical:	CHLORIDE		
Sample Collected:	10-MAY-16	Findings:	19. MG/L
Chemical:	SULFATE		
Sample Collected:	10-MAY-16	Findings:	0.3 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	10-MAY-16	Findings:	140. UG/L
Chemical:	COPPER		
Sample Collected:	10-MAY-16	Findings:	410. UG/L
Chemical:	ZINC		
Sample Collected:	10-MAY-16	Findings:	290. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10-MAY-16	Findings:	0.4 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	07-JUN-16	Findings:	1.3 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-SEP-16	Findings:	1.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-SEP-16	Findings:	0.18 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	12-SEP-16	Findings:	150. UG/L
Chemical:	BARIUM		
Sample Collected:	12-SEP-16	Findings:	2.1 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-SEP-16	Findings:	0.71 UG/L
Chemical:	TRICHLOROETHYLENE		

11
NNW
1/2 - 1 Mile
Higher

CA WELLS 1362

Water System Information:

Prime Station Code:	01S/11W-12C01 S	User ID:	19C
FRDS Number:	1900018001	County:	Los Angeles
District Number:	49	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340621.0 1175922.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 408		

System Number: 1900018
System Name: LIVINGSTON-GRAHAM
Organization That Operates System:
16080 E. ARROW HWY
IRWINDALE, CA 91706
Pop Served: 26 Connections: 1
Area Served: Not Reported

Sample Collected:	03-OCT-16	Findings:	270. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	27-FEB-14	Findings:	554. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	27-FEB-14	Findings:	7.14
Chemical:	PH, FIELD		
Sample Collected:	27-FEB-14	Findings:	152. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	27-FEB-14	Findings:	45.5 MG/L
Chemical:	CALCIUM		
Sample Collected:	27-FEB-14	Findings:	9.33 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	27-FEB-14	Findings:	57.1 MG/L
Chemical:	SODIUM		
Sample Collected:	27-FEB-14	Findings:	4.13 MG/L
Chemical:	POTASSIUM		
Sample Collected:	27-FEB-14	Findings:	42.3 MG/L
Chemical:	CHLORIDE		
Sample Collected:	27-FEB-14	Findings:	58.1 MG/L
Chemical:	SULFATE		
Sample Collected:	27-FEB-14	Findings:	0.11 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	27-FEB-14	Findings:	360. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	27-FEB-14	Findings:	52.4 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	07-OCT-15	Findings:	290. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	07-OCT-15	Findings:	5.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-OCT-16	Findings:	0.67 MG/L
Chemical:	NITRATE (AS N)		

12
North
1/2 - 1 Mile
Higher

CA WELLS **CADW60000005092**

Objectid:	5092
Latitude:	34.1066
Longitude:	-117.9829
Site code:	341066N1179829W001
State well numbe:	Not Reported
Local well name:	'MW-1'
Well use id:	1
Well use descrip:	Observation
County id:	19
County name:	Los Angeles

Basin code:	'4-13'
Basin desc:	San Gabriel Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000005092

C13
WNW **CA WELLS** **1336**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/11W-02G02 S	User ID:	4TH
FRDS Number:	1910090001	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1180000.0	Precision:	Undefined
Source Name:	MONROVIA WELL 01		
System Number:	1910090		
System Name:	MONROVIA-CITY, WATER DEPT.		
Organization That Operates System:			
	415 SOUTH IVY AVENUE		
	MONROVIA, CA 91016		
Pop Served:	37545	Connections:	8359
Area Served:	MONROVIA		

C14
WNW **CA WELLS** **1335**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/11W-02G01 S	User ID:	4TH
FRDS Number:	1910090002	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1180000.0	Precision:	Undefined
Source Name:	MONROVIA WELL 02		
System Number:	1910090		
System Name:	MONROVIA-CITY, WATER DEPT.		
Organization That Operates System:			
	415 SOUTH IVY AVENUE		
	MONROVIA, CA 91016		
Pop Served:	37545	Connections:	8359
Area Served:	MONROVIA		
Sample Collected:	15-JUL-15	Findings:	5.3 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-AUG-15	Findings:	3.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-AUG-15	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	04-AUG-15	Findings:	6.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-SEP-15	Findings:	3.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-SEP-15	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-SEP-15	Findings:	6.3 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	06-OCT-15	Findings:	3.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-OCT-15	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-OCT-15	Findings:	6.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	14-OCT-15	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	14-OCT-15	Findings:	1.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-OCT-15	Findings:	400. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	14-OCT-15	Findings:	5.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-NOV-15	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-NOV-15	Findings:	3.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-NOV-15	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-NOV-15	Findings:	6.7 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-DEC-15	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-DEC-15	Findings:	3.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-DEC-15	Findings:	64. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-DEC-15	Findings:	6.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-JAN-16	Findings:	5.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-JAN-16	Findings:	1.2 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-JAN-16	Findings:	2. UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	12-JAN-16	Findings:	4.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-JAN-16	Findings:	1.5 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-JAN-16	Findings:	2. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-FEB-16	Findings:	9.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-FEB-16	Findings:	0.8 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-FEB-16	Findings:	2.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-MAR-16	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-MAR-16	Findings:	3.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-MAR-16	Findings:	5.3 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-APR-16	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-APR-16	Findings:	3.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-APR-16	Findings:	6.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	12-APR-16	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-APR-16	Findings:	0.32 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	12-APR-16	Findings:	7.1 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	12-APR-16	Findings:	3.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-APR-16	Findings:	5.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	03-MAY-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	03-MAY-16	Findings:	0.63 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-MAY-16	Findings:	2.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-MAY-16	Findings:	4.7 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-MAY-16	Findings:	660. US
Chemical:	SPECIFIC CONDUCTANCE		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	04-MAY-16	Findings:	8.1
Chemical:	PH, LABORATORY		
Sample Collected:	04-MAY-16	Findings:	210. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	04-MAY-16	Findings:	250. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	04-MAY-16	Findings:	2. MG/L
Chemical:	CARBONATE ALKALINITY		
Sample Collected:	04-MAY-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-MAY-16	Findings:	320. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	04-MAY-16	Findings:	88. MG/L
Chemical:	CALCIUM		
Sample Collected:	04-MAY-16	Findings:	25. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	04-MAY-16	Findings:	17. MG/L
Chemical:	SODIUM		
Sample Collected:	04-MAY-16	Findings:	2.2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	04-MAY-16	Findings:	31. MG/L
Chemical:	CHLORIDE		
Sample Collected:	04-MAY-16	Findings:	42. MG/L
Chemical:	SULFATE		
Sample Collected:	04-MAY-16	Findings:	0.35 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	04-MAY-16	Findings:	420. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-MAY-16	Findings:	1.5
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	04-MAY-16	Findings:	0.11 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	04-MAY-16	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	04-MAY-16	Findings:	12. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	07-JUN-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-JUN-16	Findings:	0.76 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-JUN-16	Findings:	3.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JUN-16	Findings:	5.2 UG/L
Chemical:	PERCHLORATE		

Sample Collected:	05-JUL-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-JUL-16	Findings:	0.94 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-JUL-16	Findings:	3.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUL-16	Findings:	4.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	13-JUL-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-JUL-16	Findings:	0.88 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-JUL-16	Findings:	3.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-JUL-16	Findings:	380. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	13-JUL-16	Findings:	4.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	02-AUG-16	Findings:	11. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-AUG-16	Findings:	0.83 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-AUG-16	Findings:	3.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-AUG-16	Findings:	4.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	06-SEP-16	Findings:	11. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	06-SEP-16	Findings:	1. UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-SEP-16	Findings:	4. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-OCT-16	Findings:	11. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-OCT-16	Findings:	0.81 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-OCT-16	Findings:	3.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	18-OCT-16	Findings:	6.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	18-OCT-16	Findings:	1.9 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	18-OCT-16	Findings:	6.7 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	01-NOV-16	Findings:	9.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-NOV-16	Findings:	1.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-NOV-16	Findings:	5.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-DEC-16	Findings:	9.9 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	06-DEC-16	Findings:	1.4 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-DEC-16	Findings:	5.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-JAN-17	Findings:	5.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	10-JAN-17	Findings:	2.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JAN-17	Findings:	8.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-MAR-17	Findings:	8. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-MAR-17	Findings:	2.2 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-MAR-17	Findings:	7.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-APR-17	Findings:	7.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-APR-17	Findings:	2.5 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-APR-17	Findings:	9.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-APR-17	Findings:	8. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	11-APR-17	Findings:	1.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-APR-17	Findings:	7.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-MAY-17	Findings:	720. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	02-MAY-17	Findings:	7.7
Chemical:	PH, LABORATORY		
Sample Collected:	02-MAY-17	Findings:	240. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	02-MAY-17	Findings:	290. MG/L
Chemical:	BICARBONATE ALKALINITY		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	02-MAY-17	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAY-17	Findings:	320. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	02-MAY-17	Findings:	89. MG/L
Chemical:	CALCIUM		
Sample Collected:	02-MAY-17	Findings:	25. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	02-MAY-17	Findings:	19. MG/L
Chemical:	SODIUM		
Sample Collected:	02-MAY-17	Findings:	2.5 MG/L
Chemical:	POTASSIUM		
Sample Collected:	02-MAY-17	Findings:	33. MG/L
Chemical:	CHLORIDE		
Sample Collected:	02-MAY-17	Findings:	45. MG/L
Chemical:	SULFATE		
Sample Collected:	02-MAY-17	Findings:	0.38 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	02-MAY-17	Findings:	450. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	02-MAY-17	Findings:	1.1
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	02-MAY-17	Findings:	0.11 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	02-MAY-17	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	02-MAY-17	Findings:	12. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	02-MAY-17	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAY-17	Findings:	0.89 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-MAY-17	Findings:	3.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUL-17	Findings:	30. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-JUL-17	Findings:	2.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUL-17	Findings:	4.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-AUG-17	Findings:	15. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-AUG-17	Findings:	2. UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	01-AUG-17	Findings:	5.3 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-AUG-17	Findings:	15. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-AUG-17	Findings:	2.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-AUG-17	Findings:	470. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-SEP-17	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-SEP-17	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-SEP-17	Findings:	3.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-OCT-17	Findings:	6.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	03-OCT-17	Findings:	2.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-OCT-17	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	17-OCT-17	Findings:	5.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	17-OCT-17	Findings:	2.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	17-OCT-17	Findings:	13. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-NOV-17	Findings:	9.8 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-NOV-17	Findings:	1.4 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-NOV-17	Findings:	7. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-NOV-17	Findings:	5.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	06-DEC-17	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	06-DEC-17	Findings:	2.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-DEC-17	Findings:	4.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	02-JAN-18	Findings:	15. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-JAN-18	Findings:	2.2 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	02-JAN-18	Findings:	5. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	03-JAN-12	Findings:	2.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-JAN-12	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-JAN-12	Findings:	2.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-JAN-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-FEB-12	Findings:	2.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-FEB-12	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAR-12	Findings:	6.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-MAR-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	720. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03-APR-12	Findings:	7.4
Chemical:	PH, LABORATORY		
Sample Collected:	03-APR-12	Findings:	250. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	03-APR-12	Findings:	310. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	03-APR-12	Findings:	340. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	03-APR-12	Findings:	91. MG/L
Chemical:	CALCIUM		
Sample Collected:	03-APR-12	Findings:	27. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	03-APR-12	Findings:	26. MG/L
Chemical:	SODIUM		
Sample Collected:	03-APR-12	Findings:	2.2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	03-APR-12	Findings:	34. MG/L
Chemical:	CHLORIDE		
Sample Collected:	03-APR-12	Findings:	45. MG/L
Chemical:	SULFATE		
Sample Collected:	03-APR-12	Findings:	0.26 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	03-APR-12	Findings:	460. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

Sample Collected:	03-APR-12	Findings:	0.84
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	03-APR-12	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	0.15 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	03-APR-12	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	03-APR-12	Findings:	7100. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	03-APR-12	Findings:	0.55 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-APR-12	Findings:	3.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-APR-12	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	19-APR-12	Findings:	6.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	19-APR-12	Findings:	24. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-MAY-12	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-MAY-12	Findings:	7.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-MAY-12	Findings:	24. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-JUN-12	Findings:	0.54 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-JUN-12	Findings:	6.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUN-12	Findings:	24. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-JUL-12	Findings:	0.55 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-JUL-12	Findings:	7.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-JUL-12	Findings:	25. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-JUL-12	Findings:	0.69 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	16-JUL-12	Findings:	0.52 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	16-JUL-12	Findings:	8.9 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	16-JUL-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-AUG-12	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-AUG-12	Findings:	8.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-AUG-12	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-SEP-12	Findings:	0.65 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-SEP-12	Findings:	9.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-SEP-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-OCT-12	Findings:	0.62 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-OCT-12	Findings:	8.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-OCT-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-OCT-12	Findings:	0.62 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-OCT-12	Findings:	8.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-OCT-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-NOV-12	Findings:	4.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-NOV-12	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-DEC-12	Findings:	0.66 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-DEC-12	Findings:	9.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-DEC-12	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JAN-13	Findings:	0.62 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-JAN-13	Findings:	7.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JAN-13	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-JAN-13	Findings:	0.73 UG/L
Chemical:	TETRACHLOROETHYLENE		

Sample Collected:	08-JAN-13	Findings:	10. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	08-JAN-13	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-FEB-13	Findings:	0.68 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-FEB-13	Findings:	8. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-FEB-13	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAR-13	Findings:	0.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-MAR-13	Findings:	9.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-MAR-13	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-APR-13	Findings:	0.63 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-APR-13	Findings:	8.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-APR-13	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-13	Findings:	0.36 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	09-APR-13	Findings:	0.66 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	09-APR-13	Findings:	0.57 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	09-APR-13	Findings:	10. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-APR-13	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-MAY-13	Findings:	0.65 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-MAY-13	Findings:	9.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-MAY-13	Findings:	33. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-MAY-13	Findings:	640. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	23-MAY-13	Findings:	7.7
Chemical:	PH, LABORATORY		
Sample Collected:	23-MAY-13	Findings:	210. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		

Sample Collected:	23-MAY-13	Findings:	260. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	23-MAY-13	Findings:	280. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	23-MAY-13	Findings:	78. MG/L
Chemical:	CALCIUM		
Sample Collected:	23-MAY-13	Findings:	22. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	23-MAY-13	Findings:	19. MG/L
Chemical:	SODIUM		
Sample Collected:	23-MAY-13	Findings:	2.1 MG/L
Chemical:	POTASSIUM		
Sample Collected:	23-MAY-13	Findings:	28. MG/L
Chemical:	CHLORIDE		
Sample Collected:	23-MAY-13	Findings:	41. MG/L
Chemical:	SULFATE		
Sample Collected:	23-MAY-13	Findings:	0.31 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	23-MAY-13	Findings:	390. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	23-MAY-13	Findings:	1.
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	23-MAY-13	Findings:	40. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-MAY-13	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	23-MAY-13	Findings:	9100. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	23-MAY-13	Findings:	2.6 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	1.1 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	0.26 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	4. PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	23-MAY-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	23-MAY-13	Findings:	0.39 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	23-MAY-13	Findings:	0.56 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	23-MAY-13	Findings:	0.99 PCI/L
Chemical:	GROSS BETA MDA95		

Sample Collected:	04-JUN-13	Findings:	0.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-JUN-13	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-JUN-13	Findings:	34. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUL-13	Findings:	0.78 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-JUL-13	Findings:	12. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JUL-13	Findings:	34. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUL-13	Findings:	4.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	10-JUL-13	Findings:	0.68 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JUL-13	Findings:	0.59 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	10-JUL-13	Findings:	13. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-JUL-13	Findings:	35. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-AUG-13	Findings:	0.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-AUG-13	Findings:	14. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-AUG-13	Findings:	35. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-AUG-13	Findings:	3.6 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	03-SEP-13	Findings:	0.74 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-SEP-13	Findings:	13. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-SEP-13	Findings:	36. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-SEP-13	Findings:	4.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-OCT-13	Findings:	0.67 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-OCT-13	Findings:	14. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-OCT-13	Findings:	38. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	01-OCT-13	Findings:	4.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	11-OCT-13	Findings:	0.65 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-OCT-13	Findings:	0.79 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	11-OCT-13	Findings:	16. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-OCT-13	Findings:	47. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-OCT-13	Findings:	5.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-NOV-13	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-NOV-13	Findings:	41. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-DEC-13	Findings:	0.63 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-DEC-13	Findings:	12. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-DEC-13	Findings:	40. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-DEC-13	Findings:	4.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-JAN-14	Findings:	10. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JAN-14	Findings:	58. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JAN-14	Findings:	6.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	31-JAN-14	Findings:	0.66 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	31-JAN-14	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	31-JAN-14	Findings:	57. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	31-JAN-14	Findings:	5.7 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-FEB-14	Findings:	9. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-FEB-14	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-FEB-14	Findings:	5.7 UG/L
Chemical:	PERCHLORATE		

Sample Collected:	04-MAR-14	Findings:	0.63 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-MAR-14	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-MAR-14	Findings:	57. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-MAR-14	Findings:	5.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	02-APR-14	Findings:	0.55 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-APR-14	Findings:	10. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-APR-14	Findings:	57. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-APR-14	Findings:	5.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	09-APR-14	Findings:	0.69 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	09-APR-14	Findings:	0.199 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	09-APR-14	Findings:	0.151 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	09-APR-14	Findings:	0.363 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	09-APR-14	Findings:	4.49 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	09-APR-14	Findings:	0.342 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	09-APR-14	Findings:	0.77 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	09-APR-14	Findings:	11. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-APR-14	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-14	Findings:	4.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	09-APR-14	Findings:	1.6e-002 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	06-MAY-14	Findings:	730. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	06-MAY-14	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	06-MAY-14	Findings:	210. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		

Sample Collected:	06-MAY-14	Findings:	260. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	06-MAY-14	Findings:	320. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	06-MAY-14	Findings:	86. MG/L
Chemical:	CALCIUM		
Sample Collected:	06-MAY-14	Findings:	26. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	06-MAY-14	Findings:	18. MG/L
Chemical:	SODIUM		
Sample Collected:	06-MAY-14	Findings:	2.2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	06-MAY-14	Findings:	29. MG/L
Chemical:	CHLORIDE		
Sample Collected:	06-MAY-14	Findings:	42. MG/L
Chemical:	SULFATE		
Sample Collected:	06-MAY-14	Findings:	0.32 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	06-MAY-14	Findings:	8.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-MAY-14	Findings:	440. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	06-MAY-14	Findings:	1.2
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	06-MAY-14	Findings:	58. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAY-14	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	06-MAY-14	Findings:	13000. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	06-MAY-14	Findings:	5.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	03-JUN-14	Findings:	0.58 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-JUN-14	Findings:	10. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-JUN-14	Findings:	58. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-JUN-14	Findings:	6.2 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-JUL-14	Findings:	0.53 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-JUL-14	Findings:	8.6 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	01-JUL-14	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-JUL-14	Findings:	6.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-JUL-14	Findings:	1.3 UG/L
Chemical:	CHLOROFORM (THM)		
Sample Collected:	07-JUL-14	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-JUL-14	Findings:	0.84 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	07-JUL-14	Findings:	12. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JUL-14	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUL-14	Findings:	5.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-AUG-14	Findings:	0.53 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-AUG-14	Findings:	8.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-AUG-14	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-AUG-14	Findings:	5.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	02-SEP-14	Findings:	0.59 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-SEP-14	Findings:	8.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-SEP-14	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-SEP-14	Findings:	6.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	06-OCT-14	Findings:	0.51 UG/L
Chemical:	1,1-DICHLOROETHYLENE		
Sample Collected:	06-OCT-14	Findings:	6.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-OCT-14	Findings:	460. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	06-OCT-14	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-OCT-14	Findings:	5.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-OCT-14	Findings:	7.6 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	07-OCT-14	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-OCT-14	Findings:	5.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	04-NOV-14	Findings:	6.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-NOV-14	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-NOV-14	Findings:	6.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-DEC-14	Findings:	6.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-DEC-14	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-DEC-14	Findings:	6.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	06-JAN-15	Findings:	4.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-JAN-15	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-JAN-15	Findings:	5.3 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	20-JAN-15	Findings:	5.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	20-JAN-15	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-JAN-15	Findings:	5.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	03-FEB-15	Findings:	5.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-FEB-15	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-FEB-15	Findings:	6.1 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	03-MAR-15	Findings:	6.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-MAR-15	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-MAR-15	Findings:	6. UG/L
Chemical:	PERCHLORATE		
Sample Collected:	01-APR-15	Findings:	4.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-APR-15	Findings:	54. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	01-APR-15	Findings:	5.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-APR-15	Findings:	5.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-APR-15	Findings:	62. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-APR-15	Findings:	6.9 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	05-MAY-15	Findings:	4.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-MAY-15	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAY-15	Findings:	6.4 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	02-JUN-15	Findings:	5. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JUN-15	Findings:	64. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUN-15	Findings:	6.5 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	07-JUL-15	Findings:	4.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JUL-15	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUL-15	Findings:	6.8 UG/L
Chemical:	PERCHLORATE		
Sample Collected:	15-JUL-15	Findings:	4.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	15-JUL-15	Findings:	62. MG/L
Chemical:	NITRATE (AS NO3)		

C15
WNW
1/2 - 1 Mile
Lower

CA WELLS **1334**

Water System Information:

Prime Station Code:	01S/11W-02F02 S	User ID:	4TH
FRDS Number:	1910003009	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1180000.0	Precision:	Undefined
Source Name:	LONGDEN WELL 02		
System Number:	1910003		
System Name:	ARCADIA-CITY, WATER DIVISION		
Organization That Operates System:			
	240 W HUNTINGTON DRIVE		
	ARCADIA, CA 91006		
Pop Served:	48290	Connections:	12901
Area Served:	ARCADIA		

Sample Collected:	10-JAN-12	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-FEB-12	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-MAR-12	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-MAR-12	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-APR-12	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-MAY-12	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-12	Findings:	0.97 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-JUN-12	Findings:	24. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-12	Findings:	0.98 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-JUN-12	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUL-12	Findings:	1.4 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JUL-12	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-AUG-12	Findings:	32. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-SEP-12	Findings:	1.1 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-SEP-12	Findings:	330. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-SEP-12	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-SEP-12	Findings:	0.97 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-SEP-12	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-OCT-12	Findings:	39. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-NOV-12	Findings:	46. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-DEC-12	Findings:	3.7 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	03-DEC-12	Findings:	50. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	12-DEC-12	Findings:	0.53 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-DEC-12	Findings:	50. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-FEB-13	Findings:	0.54 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-FEB-13	Findings:	44. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAR-13	Findings:	0.34 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	05-MAR-13	Findings:	0.53 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-MAR-13	Findings:	45. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-MAR-13	Findings:	0.56 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-MAR-13	Findings:	47. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-13	Findings:	42. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-MAY-13	Findings:	42. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-13	Findings:	44. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-13	Findings:	1.9 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-JUN-13	Findings:	0.59 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-JUN-13	Findings:	45. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-JUL-13	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	09-JUL-13	Findings:	47. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-AUG-13	Findings:	0.54 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-AUG-13	Findings:	45. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-SEP-13	Findings:	2.6 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	05-SEP-13	Findings:	1.1 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-SEP-13	Findings:	340. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		

Sample Collected:	05-SEP-13	Findings:	36. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-SEP-13	Findings:	45. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-OCT-13	Findings:	1. UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	08-OCT-13	Findings:	38. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-NOV-13	Findings:	1. UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-NOV-13	Findings:	37. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-DEC-13	Findings:	53. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-DEC-13	Findings:	52. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-JAN-14	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-JAN-14	Findings:	55. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-FEB-14	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-MAR-14	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-14	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-APR-14	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUN-14	Findings:	0.505 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	10-JUN-14	Findings:	0.253 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	10-JUN-14	Findings:	3.3e-002 PCI/L
Chemical:	RA-226 FOR CWS OR TOTAL RA FOR NTNC BY 903.0		
Sample Collected:	10-JUN-14	Findings:	0.213 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	10-JUN-14	Findings:	0.363 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	10-JUN-14	Findings:	550. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10-JUN-14	Findings:	7.54
Chemical:	PH, LABORATORY		
Sample Collected:	10-JUN-14	Findings:	200. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		

Sample Collected:	10-JUN-14	Findings:	240. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10-JUN-14	Findings:	240. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	10-JUN-14	Findings:	66.9 MG/L
Chemical:	CALCIUM		
Sample Collected:	10-JUN-14	Findings:	18. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10-JUN-14	Findings:	16. MG/L
Chemical:	SODIUM		
Sample Collected:	10-JUN-14	Findings:	2.1 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10-JUN-14	Findings:	24. MG/L
Chemical:	CHLORIDE		
Sample Collected:	10-JUN-14	Findings:	35. MG/L
Chemical:	SULFATE		
Sample Collected:	10-JUN-14	Findings:	0.38 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	10-JUN-14	Findings:	0.247 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	10-JUN-14	Findings:	3.3 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	10-JUN-14	Findings:	1.2 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JUN-14	Findings:	0.64 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-JUN-14	Findings:	330. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10-JUN-14	Findings:	0.758
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	10-JUN-14	Findings:	0.221
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	10-JUN-14	Findings:	41. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUN-14	Findings:	12.1
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	10-JUN-14	Findings:	1.6e-002 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	08-JUL-14	Findings:	1.2 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	08-JUL-14	Findings:	0.81 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	08-JUL-14	Findings:	38. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	10-JUL-14	Findings:	1.3 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JUL-14	Findings:	0.71 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-JUL-14	Findings:	37. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-AUG-14	Findings:	0.92 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-AUG-14	Findings:	0.79 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-AUG-14	Findings:	41. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-SEP-14	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-OCT-14	Findings:	53. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-OCT-14	Findings:	52. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-NOV-14	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-DEC-14	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-JAN-15	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JAN-15	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-FEB-15	Findings:	57. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-MAR-15	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-APR-15	Findings:	54. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-MAY-15	Findings:	55. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-JUN-15	Findings:	58. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUL-15	Findings:	58. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUL-15	Findings:	60. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	27-AUG-15	Findings:	55. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-SEP-15	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	21-OCT-15	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	21-OCT-15	Findings:	0.217 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	21-OCT-15	Findings:	310. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	21-OCT-15	Findings:	1.e-002 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	17-NOV-15	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-DEC-15	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-JAN-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-JAN-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-JAN-16	Findings:	0.36 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	20-JAN-16	Findings:	4.7 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	20-JAN-16	Findings:	130. UG/L
Chemical:	ALUMINUM		
Sample Collected:	01-JUL-16	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	11-JUL-16	Findings:	300. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11-JUL-16	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-JUL-16	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	09-AUG-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-SEP-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	08-DEC-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	08-DEC-16	Findings:	1.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-JAN-17	Findings:	10. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-JAN-17	Findings:	0.82 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-JAN-17	Findings:	4.7 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	13-JUN-17	Findings:	21. C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	13-JUN-17	Findings:	510. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	13-JUN-17	Findings:	7.63
Chemical:	PH, LABORATORY		
Sample Collected:	13-JUN-17	Findings:	150. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	13-JUN-17	Findings:	190. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	13-JUN-17	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-JUN-17	Findings:	229. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	13-JUN-17	Findings:	64.1 MG/L
Chemical:	CALCIUM		
Sample Collected:	13-JUN-17	Findings:	16.9 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	13-JUN-17	Findings:	14. MG/L
Chemical:	SODIUM		
Sample Collected:	13-JUN-17	Findings:	2.1 MG/L
Chemical:	POTASSIUM		
Sample Collected:	13-JUN-17	Findings:	21. MG/L
Chemical:	CHLORIDE		
Sample Collected:	13-JUN-17	Findings:	28. MG/L
Chemical:	SULFATE		
Sample Collected:	13-JUN-17	Findings:	0.38 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	13-JUN-17	Findings:	330. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	13-JUN-17	Findings:	0.704
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	13-JUN-17	Findings:	0.199
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	13-JUN-17	Findings:	0.22 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	13-JUN-17	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	13-JUN-17	Findings:	12. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	19-JUN-17	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	19-JUL-17	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		

Sample Collected:	20-OCT-17	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-OCT-17	Findings:	0.83 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-NOV-17	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-NOV-17	Findings:	1.1 UG/L
Chemical:	TRICHLOROETHYLENE		

C16
WNW **CA WELLS** **1359**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/11W-11C04 S	User ID:	4TH
FRDS Number:	1910003015	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1180000.0	Precision:	Undefined
Source Name:	PECK WELL 01		
System Number:	1910003		
System Name:	ARCADIA-CITY, WATER DIVISION		
Organization That Operates System:			
	240 W HUNTINGTON DRIVE		
	ARCADIA, CA 91006		
Pop Served:	48290	Connections:	12901
Area Served:	ARCADIA		
Sample Collected:	13-JUN-17	Findings:	22.9 C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	13-JUN-17	Findings:	420. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	13-JUN-17	Findings:	7.5
Chemical:	PH, LABORATORY		
Sample Collected:	13-JUN-17	Findings:	140. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	13-JUN-17	Findings:	170. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	13-JUN-17	Findings:	172. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	13-JUN-17	Findings:	50.4 MG/L
Chemical:	CALCIUM		
Sample Collected:	13-JUN-17	Findings:	11.2 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	13-JUN-17	Findings:	21. MG/L
Chemical:	SODIUM		
Sample Collected:	13-JUN-17	Findings:	2.2 MG/L
Chemical:	POTASSIUM		

Sample Collected:	13-JUN-17	Findings:	22. MG/L
Chemical:	CHLORIDE		
Sample Collected:	13-JUN-17	Findings:	41. MG/L
Chemical:	SULFATE		
Sample Collected:	13-JUN-17	Findings:	0.32 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	13-JUN-17	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	13-JUN-17	Findings:	0.466
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	13-JUN-17	Findings:	11.7
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	19-JUN-17	Findings:	0.32 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	11-JUN-12	Findings:	2.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-SEP-12	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11-JUN-13	Findings:	2.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-13	Findings:	2.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-SEP-13	Findings:	260. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	03-APR-14	Findings:	0.28 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	10-JUN-14	Findings:	0.518 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	10-JUN-14	Findings:	0.2 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	10-JUN-14	Findings:	0.169 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	10-JUN-14	Findings:	0.363 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	10-JUN-14	Findings:	430. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10-JUN-14	Findings:	7.48
Chemical:	PH, LABORATORY		
Sample Collected:	10-JUN-14	Findings:	140. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	10-JUN-14	Findings:	170. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10-JUN-14	Findings:	160. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		

Sample Collected:	10-JUN-14	Findings:	46.7 MG/L
Chemical:	CALCIUM		
Sample Collected:	10-JUN-14	Findings:	11. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10-JUN-14	Findings:	21. MG/L
Chemical:	SODIUM		
Sample Collected:	10-JUN-14	Findings:	2. MG/L
Chemical:	POTASSIUM		
Sample Collected:	10-JUN-14	Findings:	24. MG/L
Chemical:	CHLORIDE		
Sample Collected:	10-JUN-14	Findings:	47. MG/L
Chemical:	SULFATE		
Sample Collected:	10-JUN-14	Findings:	0.34 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	10-JUN-14	Findings:	0.682 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	10-JUN-14	Findings:	6.7e-002 MG/L
Chemical:	FOAMING AGENTS (MBAS)		
Sample Collected:	10-JUN-14	Findings:	260. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10-JUN-14	Findings:	0.409
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	10-JUN-14	Findings:	- 0.128
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	10-JUN-14	Findings:	2.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUN-14	Findings:	11.7
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	10-JUN-14	Findings:	1.091 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	12-JAN-15	Findings:	0.605 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	12-JAN-15	Findings:	0.2 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	12-JAN-15	Findings:	0.108 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	12-JAN-15	Findings:	0.47 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	12-JAN-15	Findings:	3.78 PCI/L
Chemical:	GROSS ALPHA		
Sample Collected:	12-JAN-15	Findings:	0.316 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	12-JAN-15	Findings:	1.1 PCI/L
Chemical:	URANIUM (PCI/L)		

Sample Collected:	12-JAN-15	Findings:	1.6e-002 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	21-OCT-15	Findings:	270. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	11-JUL-16	Findings:	230. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	02-MAY-17	Findings:	0.44 MG/L
Chemical:	NITRATE (AS N)		

C17
WNW **CA WELLS** **1338**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/11W-02H02 S	User ID:	4TH
FRDS Number:	1910090005	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1180000.0	Precision:	Undefined
Source Name:	MONROVIA WELL 05		
System Number:	1910090		
System Name:	MONROVIA-CITY, WATER DEPT.		
Organization That Operates System:			
	415 SOUTH IVY AVENUE		
	MONROVIA, CA 91016		
Pop Served:	37545	Connections:	8359
Area Served:	MONROVIA		
Sample Collected:	03-JAN-12	Findings:	3.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-FEB-12	Findings:	4.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAR-12	Findings:	5.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	6.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	370. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03-APR-12	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	03-APR-12	Findings:	130. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	03-APR-12	Findings:	160. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	03-APR-12	Findings:	160. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	03-APR-12	Findings:	47. MG/L
Chemical:	CALCIUM		

Sample Collected:	03-APR-12	Findings:	11. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	03-APR-12	Findings:	14. MG/L
Chemical:	SODIUM		
Sample Collected:	03-APR-12	Findings:	1.5 MG/L
Chemical:	POTASSIUM		
Sample Collected:	03-APR-12	Findings:	18. MG/L
Chemical:	CHLORIDE		
Sample Collected:	03-APR-12	Findings:	25. MG/L
Chemical:	SULFATE		
Sample Collected:	03-APR-12	Findings:	0.43 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	03-APR-12	Findings:	230. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	03-APR-12	Findings:	0.73
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	03-APR-12	Findings:	5.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	0.22 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	03-APR-12	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	03-APR-12	Findings:	1300. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	19-APR-12	Findings:	7.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-MAY-12	Findings:	6.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-JUN-12	Findings:	6.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-JUL-12	Findings:	7. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-AUG-12	Findings:	7.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-SEP-12	Findings:	7.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-OCT-12	Findings:	7.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-NOV-12	Findings:	8. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-DEC-12	Findings:	8.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JAN-13	Findings:	8.3 MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	05-FEB-13	Findings:	8.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAR-13	Findings:	8.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-APR-13	Findings:	8.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-13	Findings:	0.43 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	09-APR-13	Findings:	9.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-MAY-13	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-MAY-13	Findings:	420. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	23-MAY-13	Findings:	7.9
Chemical:	PH, LABORATORY		
Sample Collected:	23-MAY-13	Findings:	140. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	23-MAY-13	Findings:	170. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	23-MAY-13	Findings:	170. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	23-MAY-13	Findings:	50. MG/L
Chemical:	CALCIUM		
Sample Collected:	23-MAY-13	Findings:	12. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	23-MAY-13	Findings:	14. MG/L
Chemical:	SODIUM		
Sample Collected:	23-MAY-13	Findings:	1.7 MG/L
Chemical:	POTASSIUM		
Sample Collected:	23-MAY-13	Findings:	22. MG/L
Chemical:	CHLORIDE		
Sample Collected:	23-MAY-13	Findings:	27. MG/L
Chemical:	SULFATE		
Sample Collected:	23-MAY-13	Findings:	0.41 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	23-MAY-13	Findings:	240. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	23-MAY-13	Findings:	0.84
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	23-MAY-13	Findings:	9.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-MAY-13	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		

Sample Collected:	23-MAY-13	Findings:	2200. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	23-MAY-13	Findings:	2.1 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	0.97 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	1.5 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	23-MAY-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	23-MAY-13	Findings:	0.4 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	23-MAY-13	Findings:	0.66 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	23-MAY-13	Findings:	3. PCI/L
Chemical:	GROSS BETA MDA95		
Sample Collected:	04-JUN-13	Findings:	9.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUL-13	Findings:	0.52 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JUL-13	Findings:	9.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUL-13	Findings:	0.57 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-AUG-13	Findings:	0.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-AUG-13	Findings:	9.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-SEP-13	Findings:	0.81 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-SEP-13	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-OCT-13	Findings:	0.88 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-OCT-13	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-OCT-13	Findings:	0.52 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-OCT-13	Findings:	1. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-NOV-13	Findings:	0.89 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-NOV-13	Findings:	9.7 MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	03-DEC-13	Findings:	1. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-DEC-13	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JAN-14	Findings:	1.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JAN-14	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	31-JAN-14	Findings:	1.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-FEB-14	Findings:	0.98 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-FEB-14	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-MAR-14	Findings:	0.76 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-MAR-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-APR-14	Findings:	0.57 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-APR-14	Findings:	1.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-APR-14	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-14	Findings:	1.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-APR-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAY-14	Findings:	450. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	06-MAY-14	Findings:	8.
Chemical:	PH, LABORATORY		
Sample Collected:	06-MAY-14	Findings:	140. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	06-MAY-14	Findings:	170. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	06-MAY-14	Findings:	200. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	06-MAY-14	Findings:	56. MG/L
Chemical:	CALCIUM		
Sample Collected:	06-MAY-14	Findings:	14. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	06-MAY-14	Findings:	15. MG/L
Chemical:	SODIUM		

Sample Collected:	06-MAY-14	Findings:	1.7 MG/L
Chemical:	POTASSIUM		
Sample Collected:	06-MAY-14	Findings:	21. MG/L
Chemical:	CHLORIDE		
Sample Collected:	06-MAY-14	Findings:	28. MG/L
Chemical:	SULFATE		
Sample Collected:	06-MAY-14	Findings:	0.43 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	06-MAY-14	Findings:	0.52 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-MAY-14	Findings:	1.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-MAY-14	Findings:	270. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	06-MAY-14	Findings:	0.97
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	06-MAY-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAY-14	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	06-MAY-14	Findings:	2800. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	03-JUN-14	Findings:	0.58 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-JUN-14	Findings:	1.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-JUN-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-JUL-14	Findings:	0.57 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-JUL-14	Findings:	1.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-JUL-14	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUL-14	Findings:	0.65 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-JUL-14	Findings:	2.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-AUG-14	Findings:	0.54 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-AUG-14	Findings:	1.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-AUG-14	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	02-SEP-14	Findings:	0.67 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-SEP-14	Findings:	2.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-SEP-14	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-OCT-14	Findings:	0.66 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-OCT-14	Findings:	2.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-OCT-14	Findings:	280. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	07-OCT-14	Findings:	0.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-OCT-14	Findings:	3. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-OCT-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-NOV-14	Findings:	0.54 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-NOV-14	Findings:	2.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-NOV-14	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-DEC-14	Findings:	0.63 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-DEC-14	Findings:	3.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-DEC-14	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-JAN-15	Findings:	0.92 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-JAN-15	Findings:	4.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-JAN-15	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-JAN-15	Findings:	0.64 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	20-JAN-15	Findings:	3.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-FEB-15	Findings:	0.69 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-FEB-15	Findings:	3.8 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	03-FEB-15	Findings:	18. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-MAR-15	Findings:	0.67 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-MAR-15	Findings:	4. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-MAR-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-APR-15	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-APR-15	Findings:	3.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-APR-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-APR-15	Findings:	0.75 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-APR-15	Findings:	4.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-APR-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAY-15	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-MAY-15	Findings:	4.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-MAY-15	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUN-15	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-JUN-15	Findings:	4.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JUN-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUL-15	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-JUL-15	Findings:	5.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JUL-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-JUL-15	Findings:	0.52 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	15-JUL-15	Findings:	4.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-AUG-15	Findings:	0.52 UG/L
Chemical:	TETRACHLOROETHYLENE		

Sample Collected:	04-AUG-15	Findings:	4.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-AUG-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-SEP-15	Findings:	0.57 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-SEP-15	Findings:	4.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-SEP-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-OCT-15	Findings:	0.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-OCT-15	Findings:	6.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-OCT-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-OCT-15	Findings:	0.63 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	14-OCT-15	Findings:	5.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-OCT-15	Findings:	260. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-NOV-15	Findings:	3.7 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-NOV-15	Findings:	0.68 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-NOV-15	Findings:	6.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-NOV-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-DEC-15	Findings:	3.7 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-DEC-15	Findings:	0.57 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-DEC-15	Findings:	6.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-DEC-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-JAN-16	Findings:	1.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-JAN-16	Findings:	1.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-JAN-16	Findings:	2.1 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	02-FEB-16	Findings:	1.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-FEB-16	Findings:	1.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-MAR-16	Findings:	3.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-MAR-16	Findings:	0.68 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-MAR-16	Findings:	7.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-APR-16	Findings:	3.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-APR-16	Findings:	2.1 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-APR-16	Findings:	8. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-APR-16	Findings:	3. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-APR-16	Findings:	0.35 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	12-APR-16	Findings:	1.5 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	12-APR-16	Findings:	6.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-MAY-16	Findings:	3.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	03-MAY-16	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-MAY-16	Findings:	5.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-MAY-16	Findings:	440. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	04-MAY-16	Findings:	8.2
Chemical:	PH, LABORATORY		
Sample Collected:	04-MAY-16	Findings:	150. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	04-MAY-16	Findings:	180. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	04-MAY-16	Findings:	3.3 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-MAY-16	Findings:	190. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	04-MAY-16	Findings:	55. MG/L
Chemical:	CALCIUM		

Sample Collected:	04-MAY-16	Findings:	13. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	04-MAY-16	Findings:	14. MG/L
Chemical:	SODIUM		
Sample Collected:	04-MAY-16	Findings:	1.7 MG/L
Chemical:	POTASSIUM		
Sample Collected:	04-MAY-16	Findings:	21. MG/L
Chemical:	CHLORIDE		
Sample Collected:	04-MAY-16	Findings:	29. MG/L
Chemical:	SULFATE		
Sample Collected:	04-MAY-16	Findings:	0.42 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	04-MAY-16	Findings:	270. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-MAY-16	Findings:	1.2
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	04-MAY-16	Findings:	0.12 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	04-MAY-16	Findings:	13.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	04-MAY-16	Findings:	3.3 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	07-JUN-16	Findings:	3.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-JUN-16	Findings:	0.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-JUN-16	Findings:	6.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUL-16	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-JUL-16	Findings:	0.62 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-JUL-16	Findings:	6.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-JUL-16	Findings:	0.53 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-JUL-16	Findings:	6. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-JUL-16	Findings:	240. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	02-AUG-16	Findings:	3.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-AUG-16	Findings:	0.57 UG/L
Chemical:	TETRACHLOROETHYLENE		

Sample Collected:	02-AUG-16	Findings:	5.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-SEP-16	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	06-SEP-16	Findings:	0.65 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-SEP-16	Findings:	5.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-OCT-16	Findings:	3.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-OCT-16	Findings:	0.62 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-OCT-16	Findings:	5.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	18-OCT-16	Findings:	2.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-NOV-16	Findings:	3.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-NOV-16	Findings:	0.58 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-NOV-16	Findings:	4.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-DEC-16	Findings:	2.9 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	06-DEC-16	Findings:	4. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-JAN-17	Findings:	2.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-MAR-17	Findings:	1.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-MAR-17	Findings:	1. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-APR-17	Findings:	1.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-APR-17	Findings:	0.91 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-APR-17	Findings:	2. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	11-APR-17	Findings:	2.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-MAY-17	Findings:	410. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	02-MAY-17	Findings:	7.8
Chemical:	PH, LABORATORY		

Sample Collected:	02-MAY-17	Findings:	140. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	02-MAY-17	Findings:	180. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	02-MAY-17	Findings:	2.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAY-17	Findings:	170. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	02-MAY-17	Findings:	50. MG/L
Chemical:	CALCIUM		
Sample Collected:	02-MAY-17	Findings:	12. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	02-MAY-17	Findings:	14. MG/L
Chemical:	SODIUM		
Sample Collected:	02-MAY-17	Findings:	1.6 MG/L
Chemical:	POTASSIUM		
Sample Collected:	02-MAY-17	Findings:	19. MG/L
Chemical:	CHLORIDE		
Sample Collected:	02-MAY-17	Findings:	26. MG/L
Chemical:	SULFATE		
Sample Collected:	02-MAY-17	Findings:	0.48 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	02-MAY-17	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	02-MAY-17	Findings:	0.76
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	02-MAY-17	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	02-MAY-17	Findings:	2.2 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	02-MAY-17	Findings:	2.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAY-17	Findings:	3.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUL-17	Findings:	2.8 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-JUL-17	Findings:	4.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-AUG-17	Findings:	2.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-AUG-17	Findings:	4.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-AUG-17	Findings:	4.7 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	07-AUG-17	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-SEP-17	Findings:	2.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-SEP-17	Findings:	4.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-OCT-17	Findings:	0.85 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	17-OCT-17	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	17-OCT-17	Findings:	4. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-NOV-17	Findings:	2.4 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-NOV-17	Findings:	3.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-DEC-17	Findings:	2.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	06-DEC-17	Findings:	4.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JAN-18	Findings:	2.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-JAN-18	Findings:	4.7 UG/L
Chemical:	TRICHLOROETHYLENE		

C18
WNW **CA WELLS** **1337**
1/2 - 1 Mile
Lower

Water System Information:

Prime Station Code:	01S/11W-02H01 S	User ID:	4TH
FRDS Number:	1910090004	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1180000.0	Precision:	Undefined
Source Name:	MONROVIA WELL 04		
System Number:	1910090		
System Name:	MONROVIA-CITY, WATER DEPT.		
Organization That Operates System:			
	415 SOUTH IVY AVENUE		
	MONROVIA, CA 91016		
Pop Served:	37545	Connections:	8359
Area Served:	MONROVIA		
Sample Collected:	01-OCT-13	Findings:	7. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-OCT-13	Findings:	7.1 MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	05-NOV-13	Findings:	6.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-DEC-13	Findings:	5.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JAN-14	Findings:	6.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	31-JAN-14	Findings:	7.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-FEB-14	Findings:	7.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-MAR-14	Findings:	0.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-MAR-14	Findings:	7.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-APR-14	Findings:	0.72 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-APR-14	Findings:	7.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-14	Findings:	0.52 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-APR-14	Findings:	7.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAY-14	Findings:	8. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAY-14	Findings:	420. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	06-MAY-14	Findings:	8.
Chemical:	PH, LABORATORY		
Sample Collected:	06-MAY-14	Findings:	130. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	06-MAY-14	Findings:	160. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	06-MAY-14	Findings:	180. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	06-MAY-14	Findings:	51. MG/L
Chemical:	CALCIUM		
Sample Collected:	06-MAY-14	Findings:	12. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	06-MAY-14	Findings:	15. MG/L
Chemical:	SODIUM		
Sample Collected:	06-MAY-14	Findings:	1.6 MG/L
Chemical:	POTASSIUM		
Sample Collected:	06-MAY-14	Findings:	20. MG/L
Chemical:	CHLORIDE		

Sample Collected:	06-MAY-14	Findings:	26. MG/L
Chemical:	SULFATE		
Sample Collected:	06-MAY-14	Findings:	0.43 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	06-MAY-14	Findings:	120. UG/L
Chemical:	ZINC		
Sample Collected:	06-MAY-14	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	06-MAY-14	Findings:	0.9
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	06-MAY-14	Findings:	8. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAY-14	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	06-MAY-14	Findings:	1800. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	03-JUN-14	Findings:	0.79 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-JUN-14	Findings:	8.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-JUL-14	Findings:	0.78 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-JUL-14	Findings:	9. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUL-14	Findings:	0.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JUL-14	Findings:	8.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-AUG-14	Findings:	1. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-AUG-14	Findings:	9.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-SEP-14	Findings:	1.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-SEP-14	Findings:	9.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-OCT-14	Findings:	1.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-OCT-14	Findings:	270. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	06-OCT-14	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-OCT-14	Findings:	1.4 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	07-OCT-14	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-NOV-14	Findings:	1.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-NOV-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-DEC-14	Findings:	1.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-DEC-14	Findings:	12. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-JAN-15	Findings:	0.6 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-JAN-15	Findings:	2. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-JAN-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-JAN-15	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	20-JAN-15	Findings:	2.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	20-JAN-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-FEB-15	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	03-FEB-15	Findings:	2.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-FEB-15	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-MAR-15	Findings:	1.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-MAR-15	Findings:	9.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-APR-15	Findings:	2.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-APR-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-APR-15	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	07-APR-15	Findings:	2.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-APR-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAY-15	Findings:	0.51 UG/L
Chemical:	TETRACHLOROETHYLENE		

Sample Collected:	05-MAY-15	Findings:	2.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-MAY-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUN-15	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	02-JUN-15	Findings:	2.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JUN-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-JUL-15	Findings:	2.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-JUL-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-JUL-15	Findings:	2.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	15-JUL-15	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-AUG-15	Findings:	2.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-AUG-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-SEP-15	Findings:	2.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-SEP-15	Findings:	15. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-OCT-15	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	06-OCT-15	Findings:	3. UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-OCT-15	Findings:	16. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-OCT-15	Findings:	3.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	14-OCT-15	Findings:	1.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-OCT-15	Findings:	260. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-NOV-15	Findings:	3.8 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	04-NOV-15	Findings:	0.63 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-NOV-15	Findings:	2.8 UG/L
Chemical:	TRICHLOROETHYLENE		

Sample Collected:	04-NOV-15	Findings:	17. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-DEC-15	Findings:	3.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-DEC-15	Findings:	2.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-DEC-15	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-JAN-16	Findings:	0.99 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-JAN-16	Findings:	1.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-JAN-16	Findings:	0.59 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-FEB-16	Findings:	0.99 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-MAR-16	Findings:	3.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-MAR-16	Findings:	0.52 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	01-MAR-16	Findings:	2.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUL-16	Findings:	2.9 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-JUL-16	Findings:	0.51 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-JUL-16	Findings:	4.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	31-OCT-16	Findings:	1.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	08-NOV-16	Findings:	1.8 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	08-NOV-16	Findings:	1.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	08-NOV-16	Findings:	0.2 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	19-DEC-16	Findings:	0.7 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	19-DEC-16	Findings:	0.44 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	10-JAN-17	Findings:	1.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-MAR-17	Findings:	1.2 MG/L
Chemical:	NITRATE (AS N)		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	04-APR-17	Findings:	0.97 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	11-APR-17	Findings:	1. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAY-17	Findings:	420. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	02-MAY-17	Findings:	7.8
Chemical:	PH, LABORATORY		
Sample Collected:	02-MAY-17	Findings:	150. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	02-MAY-17	Findings:	180. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	02-MAY-17	Findings:	2.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAY-17	Findings:	180. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	02-MAY-17	Findings:	51. MG/L
Chemical:	CALCIUM		
Sample Collected:	02-MAY-17	Findings:	12. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	02-MAY-17	Findings:	15. MG/L
Chemical:	SODIUM		
Sample Collected:	02-MAY-17	Findings:	1.7 MG/L
Chemical:	POTASSIUM		
Sample Collected:	02-MAY-17	Findings:	19. MG/L
Chemical:	CHLORIDE		
Sample Collected:	02-MAY-17	Findings:	25. MG/L
Chemical:	SULFATE		
Sample Collected:	02-MAY-17	Findings:	0.48 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	02-MAY-17	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	02-MAY-17	Findings:	0.81
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	02-MAY-17	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	02-MAY-17	Findings:	2.1 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	02-MAY-17	Findings:	2.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-MAY-17	Findings:	1.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-JUL-17	Findings:	2.9 MG/L
Chemical:	NITRATE (AS N)		

Sample Collected:	05-JUL-17	Findings:	1.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-AUG-17	Findings:	2.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	01-AUG-17	Findings:	1.5 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-AUG-17	Findings:	2.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-AUG-17	Findings:	1.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	05-SEP-17	Findings:	1.9 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	05-SEP-17	Findings:	1.1 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-OCT-17	Findings:	0.94 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	17-OCT-17	Findings:	0.7 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-NOV-17	Findings:	2.2 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-NOV-17	Findings:	1.2 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	06-DEC-17	Findings:	2.7 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	06-DEC-17	Findings:	1.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-JAN-18	Findings:	2.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	02-JAN-18	Findings:	1.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-JAN-12	Findings:	5.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-JAN-12	Findings:	6.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-FEB-12	Findings:	6.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAR-12	Findings:	8. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	8.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	390. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	03-APR-12	Findings:	7.8
Chemical:	PH, LABORATORY		

Sample Collected:	03-APR-12	Findings:	130. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	03-APR-12	Findings:	160. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	03-APR-12	Findings:	170. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	03-APR-12	Findings:	49. MG/L
Chemical:	CALCIUM		
Sample Collected:	03-APR-12	Findings:	11. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	03-APR-12	Findings:	15. MG/L
Chemical:	SODIUM		
Sample Collected:	03-APR-12	Findings:	1.4 MG/L
Chemical:	POTASSIUM		
Sample Collected:	03-APR-12	Findings:	18. MG/L
Chemical:	CHLORIDE		
Sample Collected:	03-APR-12	Findings:	26. MG/L
Chemical:	SULFATE		
Sample Collected:	03-APR-12	Findings:	0.42 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	03-APR-12	Findings:	250. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	03-APR-12	Findings:	0.73
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	03-APR-12	Findings:	8.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-12	Findings:	0.55 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	03-APR-12	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	03-APR-12	Findings:	1900. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	19-APR-12	Findings:	8.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	01-MAY-12	Findings:	9.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-JUN-12	Findings:	8.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-JUL-12	Findings:	6.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-JUL-12	Findings:	9.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-AUG-12	Findings:	6.8 MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	04-SEP-12	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-OCT-12	Findings:	7.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-OCT-12	Findings:	7.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-NOV-12	Findings:	7.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-DEC-12	Findings:	6.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JAN-13	Findings:	7.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-JAN-13	Findings:	8. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-FEB-13	Findings:	7. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAR-13	Findings:	7.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-APR-13	Findings:	9.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-13	Findings:	0.43 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	09-APR-13	Findings:	8.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-MAY-13	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-MAY-13	Findings:	440. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	23-MAY-13	Findings:	7.9
Chemical:	PH, LABORATORY		
Sample Collected:	23-MAY-13	Findings:	140. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	23-MAY-13	Findings:	170. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	23-MAY-13	Findings:	190. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	23-MAY-13	Findings:	55. MG/L
Chemical:	CALCIUM		
Sample Collected:	23-MAY-13	Findings:	12. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	23-MAY-13	Findings:	16. MG/L
Chemical:	SODIUM		
Sample Collected:	23-MAY-13	Findings:	1.6 MG/L
Chemical:	POTASSIUM		

Sample Collected:	23-MAY-13	Findings:	22. MG/L
Chemical:	CHLORIDE		
Sample Collected:	23-MAY-13	Findings:	30. MG/L
Chemical:	SULFATE		
Sample Collected:	23-MAY-13	Findings:	0.38 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	23-MAY-13	Findings:	270. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	23-MAY-13	Findings:	0.91
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	23-MAY-13	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	23-MAY-13	Findings:	12.
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	23-MAY-13	Findings:	2600. MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	23-MAY-13	Findings:	2.8 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	0.6 PCI/L
Chemical:	GROSS BETA COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	0.16 PCI/L
Chemical:	RADIUM 226 COUNTING ERROR		
Sample Collected:	23-MAY-13	Findings:	1.7 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	23-MAY-13	Findings:	3. PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	23-MAY-13	Findings:	0.35 PCI/L
Chemical:	RADIUM 226 MDA95		
Sample Collected:	23-MAY-13	Findings:	0.61 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	23-MAY-13	Findings:	3. PCI/L
Chemical:	GROSS BETA MDA95		
Sample Collected:	04-JUN-13	Findings:	8.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-JUL-13	Findings:	7.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUL-13	Findings:	7.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-AUG-13	Findings:	7.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-SEP-13	Findings:	7.3 MG/L
Chemical:	NITRATE (AS NO3)		

C19
WNW
1/2 - 1 Mile
Lower

CA WELLS 1333

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Water System Information:

Prime Station Code:	01S/11W-02F01 S	User ID:	4TH
FRDS Number:	1910003008	County:	Los Angeles
District Number:	07	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	340600.0 1180000.0	Precision:	Undefined
Source Name:	LONGDEN WELL 01		
System Number:	1910003		
System Name:	ARCADIA-CITY, WATER DIVISION		
Organization That Operates System:			
	240 W HUNTINGTON DRIVE ARCADIA, CA 91006		
Pop Served:	48290	Connections:	12901
Area Served:	ARCADIA		
Sample Collected:	11-JUL-16	Findings:	330. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	12-JUL-16	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	09-AUG-16	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-SEP-16	Findings:	11. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	11-OCT-16	Findings:	11. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	11-OCT-16	Findings:	0.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-OCT-16	Findings:	11. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-OCT-16	Findings:	0.71 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-OCT-16	Findings:	1.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	08-NOV-16	Findings:	9.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	08-NOV-16	Findings:	0.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	08-NOV-16	Findings:	1.7 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-DEC-16	Findings:	8.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-DEC-16	Findings:	1.4 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-DEC-16	Findings:	4.3 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-JAN-17	Findings:	6.6 MG/L
Chemical:	NITRATE (AS N)		

Sample Collected:	12-JAN-17	Findings:	1.4 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-JAN-17	Findings:	3.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	17-JAN-17	Findings:	3.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	17-JAN-17	Findings:	0.59 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	17-JAN-17	Findings:	1.8 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-FEB-17	Findings:	1.8 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	14-FEB-17	Findings:	0.88 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-JUN-17	Findings:	20. C
Chemical:	SOURCE TEMPERATURE C		
Sample Collected:	13-JUN-17	Findings:	530. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	13-JUN-17	Findings:	7.58
Chemical:	PH, LABORATORY		
Sample Collected:	13-JUN-17	Findings:	180. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	13-JUN-17	Findings:	220. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	13-JUN-17	Findings:	7.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	13-JUN-17	Findings:	237. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	13-JUN-17	Findings:	67.7 MG/L
Chemical:	CALCIUM		
Sample Collected:	13-JUN-17	Findings:	16.4 MG/L
Chemical:	MAGNESIUM		
Sample Collected:	13-JUN-17	Findings:	19. MG/L
Chemical:	SODIUM		
Sample Collected:	13-JUN-17	Findings:	2.2 MG/L
Chemical:	POTASSIUM		
Sample Collected:	13-JUN-17	Findings:	23. MG/L
Chemical:	CHLORIDE		
Sample Collected:	13-JUN-17	Findings:	36. MG/L
Chemical:	SULFATE		
Sample Collected:	13-JUN-17	Findings:	0.32 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	13-JUN-17	Findings:	0.62 UG/L
Chemical:	TETRACHLOROETHYLENE		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Sample Collected:	13-JUN-17	Findings:	1.4 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-JUN-17	Findings:	340. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	13-JUN-17	Findings:	0.754
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	13-JUN-17	Findings:	0.235
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		
Sample Collected:	13-JUN-17	Findings:	0.63 NTU
Chemical:	TURBIDITY, LABORATORY		
Sample Collected:	13-JUN-17	Findings:	12.1
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	13-JUN-17	Findings:	7.5 MG/L
Chemical:	NITRATE + NITRITE (AS N)		
Sample Collected:	19-JUN-17	Findings:	8.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	19-JUN-17	Findings:	0.32 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	19-JUN-17	Findings:	3.3 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	19-JUN-17	Findings:	0.98 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	19-JUL-17	Findings:	9.8 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	19-JUL-17	Findings:	1.2 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	19-JUL-17	Findings:	0.56 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	20-OCT-17	Findings:	3.1 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	20-OCT-17	Findings:	0.78 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	07-NOV-17	Findings:	3.5 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-NOV-17	Findings:	6.5 UG/L
Chemical:	BROMOFORM (THM)		
Sample Collected:	07-NOV-17	Findings:	2.6 UG/L
Chemical:	DIBROMOCHLOROMETHANE (THM)		
Sample Collected:	07-NOV-17	Findings:	10. UG/L
Chemical:	TOTAL TRIHALOMETHANES		
Sample Collected:	10-JAN-12	Findings:	6. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-FEB-12	Findings:	6.5 MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	12-MAR-12	Findings:	6.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-MAR-12	Findings:	6.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-APR-12	Findings:	7.6 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-MAY-12	Findings:	8.5 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-12	Findings:	0.54 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-JUN-12	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-12	Findings:	0.57 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-JUN-12	Findings:	11. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUL-12	Findings:	0.64 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JUL-12	Findings:	10. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-AUG-12	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-SEP-12	Findings:	0.61 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	04-SEP-12	Findings:	0.53 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-SEP-12	Findings:	290. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	04-SEP-12	Findings:	14. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-SEP-12	Findings:	0.67 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-SEP-12	Findings:	0.53 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-SEP-12	Findings:	13. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-OCT-12	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-NOV-12	Findings:	0.54 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	14-NOV-12	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-DEC-12	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	12-DEC-12	Findings:	31. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-FEB-13	Findings:	28. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-MAR-13	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-MAR-13	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-APR-13	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	15-MAY-13	Findings:	0.83 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	15-MAY-13	Findings:	0.63 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	15-MAY-13	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-13	Findings:	0.56 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-JUN-13	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-JUN-13	Findings:	27. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-JUL-13	Findings:	0.78 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	09-JUL-13	Findings:	30. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-AUG-13	Findings:	0.82 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-AUG-13	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	05-SEP-13	Findings:	1.5 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	05-SEP-13	Findings:	0.79 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	05-SEP-13	Findings:	310. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	05-SEP-13	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-SEP-13	Findings:	0.73 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	09-SEP-13	Findings:	20. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-OCT-13	Findings:	0.64 UG/L
Chemical:	TETRACHLOROETHYLENE		

Sample Collected:	08-OCT-13	Findings:	21. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-NOV-13	Findings:	0.77 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	13-NOV-13	Findings:	22. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	02-DEC-13	Findings:	0.81 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	02-DEC-13	Findings:	43. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-DEC-13	Findings:	0.69 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-DEC-13	Findings:	41. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-JAN-14	Findings:	0.84 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-JAN-14	Findings:	45. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	13-JAN-14	Findings:	0.95 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	13-JAN-14	Findings:	46. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-FEB-14	Findings:	0.51 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-FEB-14	Findings:	0.9 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-FEB-14	Findings:	47. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	11-MAR-14	Findings:	0.52 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	11-MAR-14	Findings:	0.83 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	11-MAR-14	Findings:	46. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	03-APR-14	Findings:	0.25 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	03-APR-14	Findings:	0.78 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	03-APR-14	Findings:	43. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	08-APR-14	Findings:	0.92 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	08-APR-14	Findings:	29. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	10-JUN-14	Findings:	0.515 PCI/L
Chemical:	RADIUM 228 COUNTING ERROR		
Sample Collected:	10-JUN-14	Findings:	0.2 PCI/L
Chemical:	RADIUM 228 MDA95		
Sample Collected:	10-JUN-14	Findings:	0.158 PCI/L
Chemical:	RA-226 OR TOTAL RA BY 903.0 C.E.		
Sample Collected:	10-JUN-14	Findings:	0.363 PCI/L
Chemical:	RADIUM, TOTAL, MDA95-NTNC ONLY, BY 903.0		
Sample Collected:	10-JUN-14	Findings:	520. US
Chemical:	SPECIFIC CONDUCTANCE		
Sample Collected:	10-JUN-14	Findings:	7.26
Chemical:	PH, LABORATORY		
Sample Collected:	10-JUN-14	Findings:	200. MG/L
Chemical:	ALKALINITY (TOTAL) AS CACO3		
Sample Collected:	10-JUN-14	Findings:	240. MG/L
Chemical:	BICARBONATE ALKALINITY		
Sample Collected:	10-JUN-14	Findings:	220. MG/L
Chemical:	HARDNESS (TOTAL) AS CACO3		
Sample Collected:	10-JUN-14	Findings:	63.6 MG/L
Chemical:	CALCIUM		
Sample Collected:	10-JUN-14	Findings:	16. MG/L
Chemical:	MAGNESIUM		
Sample Collected:	10-JUN-14	Findings:	16. MG/L
Chemical:	SODIUM		
Sample Collected:	10-JUN-14	Findings:	1.9 MG/L
Chemical:	POTASSIUM		
Sample Collected:	10-JUN-14	Findings:	24. MG/L
Chemical:	CHLORIDE		
Sample Collected:	10-JUN-14	Findings:	34. MG/L
Chemical:	SULFATE		
Sample Collected:	10-JUN-14	Findings:	0.36 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	10-JUN-14	Findings:	0.209 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	10-JUN-14	Findings:	2.5 PCI/L
Chemical:	URANIUM (PCI/L)		
Sample Collected:	10-JUN-14	Findings:	0.82 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JUN-14	Findings:	310. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	10-JUN-14	Findings:	0.462
Chemical:	LANGELIER INDEX @ 60 C		
Sample Collected:	10-JUN-14	Findings:	- 7.6e-002
Chemical:	LANGELIER INDEX AT SOURCE TEMP.		

Sample Collected:	10-JUN-14	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUN-14	Findings:	11.8
Chemical:	AGGRSSIVE INDEX (CORROSIVITY)		
Sample Collected:	10-JUN-14	Findings:	1.6e-002 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	08-JUL-14	Findings:	0.76 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	08-JUL-14	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-JUL-14	Findings:	0.89 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	10-JUL-14	Findings:	23. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-AUG-14	Findings:	0.76 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-AUG-14	Findings:	24. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	17-SEP-14	Findings:	0.9 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	17-SEP-14	Findings:	26. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-OCT-14	Findings:	0.73 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	09-OCT-14	Findings:	43. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-OCT-14	Findings:	0.67 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-OCT-14	Findings:	40. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	04-NOV-14	Findings:	0.74 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	04-NOV-14	Findings:	46. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-DEC-14	Findings:	0.79 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	16-DEC-14	Findings:	54. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-JAN-15	Findings:	0.8 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-JAN-15	Findings:	0.76 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-JAN-15	Findings:	42. MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	14-JAN-15	Findings:	0.69 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-JAN-15	Findings:	54. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-FEB-15	Findings:	0.69 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-FEB-15	Findings:	53. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-MAR-15	Findings:	0.75 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	10-MAR-15	Findings:	51. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-APR-15	Findings:	52. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-MAY-15	Findings:	52. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	09-JUN-15	Findings:	52. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUL-15	Findings:	0.62 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-JUL-15	Findings:	56. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	14-JUL-15	Findings:	0.56 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	14-JUL-15	Findings:	53. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-AUG-15	Findings:	0.7 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-AUG-15	Findings:	0.78 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-AUG-15	Findings:	49. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-SEP-15	Findings:	59. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	21-OCT-15	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	21-OCT-15	Findings:	0.51 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	21-OCT-15	Findings:	360. MG/L
Chemical:	TOTAL DISSOLVED SOLIDS		
Sample Collected:	17-NOV-15	Findings:	61. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	16-DEC-15	Findings:	12. MG/L
Chemical:	NITRATE (AS N)		

Sample Collected:	16-DEC-15	Findings:	0.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	12-JAN-16	Findings:	8.6 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	12-JAN-16	Findings:	1.2 UG/L
Chemical:	TETRACHLOROETHYLENE		
Sample Collected:	12-JAN-16	Findings:	1.6 UG/L
Chemical:	TRICHLOROETHYLENE		
Sample Collected:	01-JUL-16	Findings:	13. MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	11-JUL-16	Findings:	14. MG/L
Chemical:	NITRATE (AS N)		

20
NNW
1/2 - 1 Mile
Lower

CA WELLS **CADW60000005093**

Objectid:	5093
Latitude:	34.1085
Longitude:	-117.9889
Site code:	341085N1179889W001
State well numbe:	Not Reported
Local well name:	'MW-2'
Well use id:	1
Well use descrip:	Observation
County id:	19
County name:	Los Angeles
Basin code:	'4-13'
Basin desc:	San Gabriel Valley
Dwr region id:	80238
Dwr region:	Southern Region Office
Site id:	CADW60000005093

1G
ESE
1/2 - 1 Mile
Lower

AQUIFLOW **34337**

Site ID:	I-12062
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	213
Date:	09/27/1990

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
91706	5	0

Federal EPA Radon Zone for LOS ANGELES County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for LOS ANGELES COUNTY, CA

Number of sites tested: 63

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.711 pCi/L	98%	2%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	0.933 pCi/L	100%	0%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW[R] Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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APPENDIX C

EDR CITY DIRECTORY

13131 Los Angeles Street

13131 Los Angeles Street
Irwindale, CA 91706

Inquiry Number: 5351994.5
July 05, 2018

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1920 through 2010. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 660 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2010	EDR Digital Archive	-	X	X	-
	EDR Digital Archive	X	X	X	-
2006	Haines Company	-	-	-	-
2004	Haines Company	-	-	-	-
2003	Haines & Company	-	-	-	-
2001	Haines Company, Inc.	-	-	-	-
2000	Haines	-	-	-	-
1999	Haines Company	-	-	-	-
1996	GTE	-	-	-	-
1995	Pacific Bell	X	X	X	-
1992	PACIFIC BELL WHITE PAGES	-	-	-	-
1991	Pacific Bell	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1990	PACIFIC BELL WHITE PAGES	X	-	X	-
1986	Pacific Bell	-	X	X	-
1985	Pacific Bell	X	X	X	-
1981	Pacific Telephone	-	-	-	-
1980	Pacific Telephone	X	X	X	-
1976	R.L. Polk & Co Publishers	-	-	-	-
1975	Pacific Telephone	X	X	X	-
1972	R. L. Polk & Co.	-	-	-	-
1971	R. L. Polk & Co.	-	-	-	-
1970	Pacific Telephone	-	-	-	-
1969	Pacific Telephone	-	-	-	-
1967	R. L. Polk & Co.	-	-	-	-
1966	Pacific Telephone	-	-	-	-
1965	GTE	-	-	-	-
1964	Pacific Telephone	-	-	-	-
1963	Pacific Telephone	-	-	-	-
1962	Pacific Telephone	-	-	-	-
1961	R. L. Polk & Co.	-	-	-	-
1960	Pacific Telephone	-	-	-	-
1958	Pacific Telephone	-	-	-	-
1957	Pacific Telephone	-	-	-	-
1956	Pacific Telephone	-	-	-	-
1955	R. L. Polk & Co.	-	-	-	-
1954	R. L. Polk & Co.	-	-	-	-
1952	Los Angeles Directory Co.	-	-	-	-
1951	Los Angeles Directory Co.	-	-	-	-
1950	Pacific Telephone	-	-	-	-
1949	Los Angeles Directory Co.	-	-	-	-
1948	Associated Telephone Company, Ltd.	-	-	-	-
1947	Pacific Directory Co.	-	-	-	-
1946	Southern California Telephone Co	-	-	-	-
1945	R. L. Polk & Co.	-	-	-	-
1944	R. L. Polk & Co.	-	-	-	-
1942	Los Angeles Directory Co.	-	-	-	-
1940	Los Angeles Directory Co.	-	-	-	-
1939	Los Angeles Directory Co.	-	-	-	-
1938	Los Angeles Directory Company Publishers	-	-	-	-
1937	Los Angeles Directory Co.	-	-	-	-
1936	Los Angeles Directory Co.	-	-	-	-
1935	Los Angeles Directory Co.	-	-	-	-
1934	Los Angeles Directory Co.	-	-	-	-
1933	Los Angeles Directory Co.	-	-	-	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1932	Los Angeles Directory Co.	-	-	-	-
1931	TRIBUNE-NEWS PUBLISHING CO.	-	-	-	-
1930	Los Angeles Directory Co.	-	-	-	-
1929	Los Angeles Directory Co.	-	-	-	-
1928	Los Angeles Directory Co.	-	-	-	-
1927	Los Angeles Directory Co.	-	-	-	-
1926	Los Angeles Directory Co.	-	-	-	-
1925	Los Angeles Directory Co.	-	-	-	-
1924	Los Angeles Directory Co.	-	-	-	-
1923	Los Angeles Directory Co.	-	-	-	-
1921	Los Angeles Directory Co.	-	-	-	-
1920	Los Angeles Directory Co.	-	-	-	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

13131 Los Angeles Street
Irwindale, CA 91706

FINDINGS DETAIL

Target Property research detail.

LOS ANGELES

13131 LOS ANGELES

Year	Uses	Source
1990	SPANCRETE OF CALIFORNIA IRWINDALE	Pacific Bell

Los Angeles St

13131 Los Angeles St

Year	Uses	Source
2010	HANSON STRUCTURAL PRECAST INC	EDR Digital Archive
	R B LEASING INC	EDR Digital Archive

LOS ANGELES ST

13131 LOS ANGELES ST

Year	Uses	Source
1995	From Los Angeles Telephones Call	Pacific Bell
	From Santa Ana Telephones Call	Pacific Bell
	RB TRUCKING	Pacific Bell
	Spancrete Of California	Pacific Bell
	UNITED READY MIX	Pacific Bell
	United Ready Mix Concrete Co Inc	Pacific Bell
1985	SPANCRETE OF CALIFORNIA	Pacific Bell
1980	PACIFIC PRESTRESSED PRODUCTS LOS ANGELES ST BALDWIN PARK	Pacific Telephone
	SPANCRETE OF CALIF LOS ANGELES ST IRWINDALE	Pacific Telephone
1975	SPANCRETE OF CALIF	Pacific Telephone

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

LITTLEJOHN ST

4501 LITTLEJOHN ST

Year	Uses	Source
1985	MEDI-NUCLEAR CORP INC	Pacific Bell

4510 LITTLEJOHN ST

Year	Uses	Source
1980	MAC DONALD CARBIDE CO LITTLEJOHN ST BALDWIN PARK	Pacific Telephone

4525 LITTLEJOHN ST

Year	Uses	Source
1980	GIBRALTER METAL PRODUCTS LITTLEJOHN ST BALDWIN PARK	Pacific Telephone

LOS ANGELES

13130 LOS ANGELES

Year	Uses	Source
1986	HUNTMIX INC BALDWIN PARK	Pacific Bell

LOS ANGELES ST

13115 LOS ANGELES ST

Year	Uses	Source
1986	MAXIM S HAMBURGER STAND	Pacific Bell

Los Angeles St

13130 Los Angeles St

Year	Uses	Source
2010	VULCAN MATERIALS COMPANY	EDR Digital Archive

FINDINGS

LOS ANGELES ST

13130 LOS ANGELES ST

Year	Uses	Source
1995	INDUSTRIAL ASPHALT	Pacific Bell
1985	HUNTMIX INC	Pacific Bell
1975	INDUSTRIAL ASPHALT INC	Pacific Telephone

13140 LOS ANGELES ST

Year	Uses	Source
1985	AQUACULTURE U S A	Pacific Bell

FINDINGS

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
13131 Los Angeles Street	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1986, 1981, 1976, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
13115 LOS ANGELES ST	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
13130 LOS ANGELES	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
13130 LOS ANGELES ST	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
13130 Los Angeles St	2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
13140 LOS ANGELES ST	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
4501 LITTLEJOHN ST	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1981, 1980, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920
4510 LITTLEJOHN ST	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

FINDINGS

Address Researched	Address Not Identified in Research Source
4525 LITTLEJOHN ST	2010, 2006, 2004, 2003, 2001, 2000, 1999, 1996, 1995, 1992, 1991, 1990, 1986, 1985, 1981, 1976, 1975, 1972, 1971, 1970, 1969, 1967, 1966, 1965, 1964, 1963, 1962, 1961, 1960, 1958, 1957, 1956, 1955, 1954, 1952, 1951, 1950, 1949, 1948, 1947, 1946, 1945, 1944, 1942, 1940, 1939, 1938, 1937, 1936, 1935, 1934, 1933, 1932, 1931, 1930, 1929, 1928, 1927, 1926, 1925, 1924, 1923, 1921, 1920

APPENDIX D

EDR LIEN REPORT

13131 Los Angeles Street
13131 Los Angeles Street
Irwindale, CA 91706

Inquiry Number: 5351994.7
July 07, 2018

EDR Environmental Lien and AUL Search

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

13131 Los Angeles Street
13131 Los Angeles Street
Irwindale, CA 91706

RESEARCH SOURCE

Source 1:

LA Recorder
Los Angeles, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	TW Los Angeles LLC
Title received from:	TW Tedesco Prop LP
Deed Dated	10/11/2016
Deed Recorded:	11/30/2016
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	TW Los Angeles LLC
Parcel # / Property Identifier:	8535-020-007
Comments:	See Exhibit

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

Deed Exhibit 1

This page is part of your document - DO NOT DISCARD

20161507066

Pages:
0006

Recorded/Filed in Official Records
Recorder's Office, Los Angeles County,
California

11/30/16 AT 03:27PM

FEES:	34.00
TAXES:	0.00
OTHER:	0.00
PAID:	34.00

LEADSHEET

201611303290076

00013033692

007979047

SEQ:
20

DAR - Courier (Hard Copy)

THIS FORM IS NOT TO BE DUPLICATED

E626109

11/30/2016

20161507066

RECORDING REQUESTED BY
AND WHEN RECORDED RETURN TO:
Jeffer Mangels Butler & Mitchell LLP
1900 Avenue of the Stars, 7th Floor
Los Angeles, California 90067
Attention: William F. Capps, Esq.

MAIL TAX STATEMENTS TO:
TW Los Angeles, LLC
2301 Private Rd.
Newport Beach, CA 92660

Common Address: 13131 Los Angeles Street
Irwindale, CA 91706

APN: 8535-020-007

GRANT DEED

THE UNDERSIGNED GRANTOR(S) DECLARE(S)
DOCUMENTARY TRANSFER TAX is $ -0- Exempt*
[ ] computed on full value of property conveyed, or
[ ] computed on full value less value of liens or encumbrances remaining at time of sale,
[ ] Unincorporated area: City of _____

* The grantor and the grantee in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property, R & T 11925(d)

FOR VALUABLE CONSIDERATION, receipt of which is hereby acknowledged,

TW TEDESCO PROPERTIES, L.P., a California limited partnership ("Grantor")

hereby grants to

TW LOS ANGELES, LLC, a California limited liability company

all the Grantor's right, title and interest in and to an undivided fifty percent (50%) interest in that certain real property located in the County of Los Angeles, State of California, as more particularly described on Exhibit "A" attached hereto.

IN WITNESS WHEREOF, the Grantor has executed this Grant Deed on OCTOBER 11, 2016

TW TEDESCO PROPERTIES, L.P., a California limited partnership

By: W.Mae LLC, a California limited liability company, General Partner

By: Laura K White
Laura K. White, Manager

By: Julie Bas
Julie M. Bas, Manager

By: Sandra L. Kay
Sandra L. Kay, Manager

MAIL TAX STATEMENTS AS DIRECTED ABOVE

EXHIBIT "A"

Legal Description of Property

Real property located in the County of Los Angeles, State of California, more particularly described as follows:

THAT PORTION OF THE WEST HALF OF THE WEST HALF OF THE SOUTHEAST QUARTER OF SECTION 12, TOWNSHIP 1 SOUTH, RANGE 11 WEST, SAN BERNARDINO MERIDIAN, IN THE CITY OF IRWINDALE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, ACCORDING TO THE OFFICIAL PLAT THEREOF, DESCRIBED AS FOLLOWS:

BEGINNING AT THE INTERSECTION OF THE EASTERLY LINE OF THE WEST HALF OF THE WEST HALF OF SAID SOUTHEAST QUARTER WITH THE SOUTHEASTERLY LINE OF RIVERGRADE ROAD (80 FEET WIDE) AS ESTABLISHED BY THE FINAL DECREE OF CONDEMNATION ENTERED IN SUPERIOR COURT LOS ANGELES COUNTY CASE NO. 602687, A CERTIFIED COPY THEREOF BEING RECORDED IN BOOK 40647 PAGE 394 OF OFFICIAL RECORDS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY; THENCE ALONG SAID EASTERLY LINE, SOUTH 0° 26' 32" EAST 28.10 FEET TO THE TRUE POINT OF BEGINNING, BEING A POINT IN A NON-TANGENT CURVE CONCAVE SOUTHEASTERLY HAVING A RADIUS OF 962 FEET, A RADIAL LINE OF SAID CURVE TO SAID POINT BEARS NORTH 55° 35' 21" WEST; THENCE SOUTHWESTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 17° 16' 52" AN ARC DISTANCE OF 290.15 FEET TO THE BEGINNING OF A REVERSE CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 3038 FEET; THENCE SOUTHWESTERLY ALONG SAID REVERSE CURVE, THROUGH A CENTRAL ANGLE OF 21° 21' 02", AN ARC DISTANCE OF 1132.07 FEET TO THE WESTERLY LINE OF THE WEST HALF OF THE WEST HALF OF SAID SOUTHEAST QUARTER; THENCE ALONG SAID WESTERLY LINE SOUTH 0° 26' 40" EAST 1124.38 FEET TO THE SOUTHERLY LINE OF SAID SECTION 12, BEING THE CENTERLINE OF LOWER AZUSA ROAD (50 FEET WIDE) AS ESTABLISHED BY DEED TO THE COUNTY OF LOS ANGELES RECORDED IN BOOK 1281 PAGE 308 OF DEEDS IN SAID OFFICE OF THE COUNTY RECORDER; THENCE ALONG SAID SOUTHERLY LINE AND SAID CENTERLINE; NORTH 88° 58' 50" EAST 660.19 FEET TO SAID EASTERLY LINE OF THE WEST HALF OF THE WEST HALF OF SAID SOUTHEAST QUARTER; THENCE ALONG SAID EASTERLY LINE NORTH 0° 26' 32" WEST 2368.33 FEET TO THE TRUE POINT OF BEGINNING.

Commonly known as: 13131 Los Angeles Street, Irwindale, CA 91706

Assessor Parcel Number: 8535-020-007

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

STATE OF CALIFORNIA)
)
COUNTY OF Orange)

On October 11, 2016, before me, Grant Gold,

a Notary Public, personally appeared LAURA K. WHITE, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

GRANT GOLD
COMM. # 1991926
NOTARY PUBLIC - CALIFORNIA
ORANGE COUNTY
MY COMM. EXP OCT. 18, 2016

Signature Grant Gold

(SEAL)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

ACKNOWLEDGMENT

STATE OF CALIFORNIA)
)
COUNTY OF Orange)

On October 11, 2016, before me, Grant Gold,

a Notary Public, personally appeared JULIE M. BAS, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature Grant Gold

GRANT GOLD
COMM. # 1991926
NOTARY PUBLIC-CALIFORNIA
ORANGE COUNTY
MY COMM. EXP. OCT. 18, 2016

(SEAL)

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

ACKNOWLEDGMENT

STATE ~~OF CALIFORNIA~~ Colorado)
COUNTY OF Douglas)

On October 13, 2016 before me, Ashley Curtis

a Notary Public, personally appeared SANDRA L. KAY, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of ~~California~~ CO that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Signature _____

ASHLEY CURTIS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20164013915
MY COMMISSION EXPIRES APRIL 11, 2020

(SEAL)

APPENDIX E

EDR SANBORN MAP

13131 Los Angeles Street

13131 Los Angeles Street

Irwindale, CA 91706

Inquiry Number: 5351994.3

July 03, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

07/03/18

Site Name:	Client Name:
13131 Los Angeles Street	Leymaster Env. Consulting
13131 Los Angeles Street	5500 East Atherton Street
Irwindale, CA 91706	Long Beach, CA 90815
EDR Inquiry # 5351994.3	Contact: Travis Knight

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Leymaster Env. Consulting were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # 1892-41B2-82B7

PO # NA

Project NA

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: 1892-41B2-82B7

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ✔ Library of Congress
- ✔ University Publications of America
- ✔ EDR Private Collection

The Sanborn Library LLC Since 1866™

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APPENDIX F

SUPPLEMENTAL AGENCY REVIEW

Department of Toxic Substances Control

Matthew Rodriquez
Secretary for
Environmental Protection

Barbara A. Lee, Director
9211 Oakdale Avenue
Chatsworth, California 91311

Edmund G. Brown Jr.
Governor

July 5, 2018

Mr. Travis Knight
Montrose Environmental
travisknight@montrose-env.com

13131 Los Angeles Street, Irwindale, CA 91706
PR3-070218-05

Dear Mr. Knight:

We have received your Public Records Act Request for records from the Department of Toxic Substances Control.

After a thorough review of our files we have found that no such records exist at this office pertaining to the site/facility referenced above.

We would also like to inform you about EnviroStor, a database that provides information and documents on over 5,000 DTSC cleanup sites. EnviroStor can be accessed at: http://www.envirostor.dtsc.ca.gov/public. Also, a computer is available in the Central Files of each DTSC Regional Office for use by community members to view EnviroStor.

If you have any questions or would like further information regarding your request, please contact me at (818) 717-6521.

Sincerely,

Robert Hardison

Robert Hardison/aa
Regional Records Coordinator

Matthew Rodriquez
Secretary for
Environmental Protection

Department of Toxic Substances Control

Barbara A. Lee, Director
5796 Corporate Avenue
Cypress, California 90630

Edmund G. Brown Jr.
Governor

July 5, 2018

Travis Knight
LEYMASTER ENVIRONMENTAL CONSULTING
5500 E Atherton Street, #210
Long Beach, CA 90815

13131 LOS ANGELES STREET, IRWINDALE, CA
PR4-070218-3

Dear Mr./Ms. Knight:

The Department of Toxic Substances Control has received your letter to review records under the Public Records Act.

After a thorough review of our files we have found that, no such records exist at this office pertaining to the site/facility referenced above.

We would like to inform you about EnviroStor, a database that provides information and documents on over 5,000 DTSC cleanup sites. EnviroStor can be accessed at: http://www.envirostor.dtsc.ca.gov/public. Also, a computer is available at each DTSC Regional File Room Office for use by community members to view EnviroStor.

If you have any questions, would like further information regarding your request, please contact our Regional Records Coordinator at (714) 484-5337.

Sincerely,

Julie Johnson

Julie Johnson
Regional Records Coordinator

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Facility Details

Facility ID	173790
Company Name	CLARK PACIFIC
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Status	ACTIVE

Are there any back fees due?

No.

SIC Code	Description
3273	READY-MIXED CONCRETE

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Compliance

Facility ID	173790
Company Name	CLARK PACIFIC
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Notices Of Violaton: NONE

Notices To Comply: NONE

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Equipment List

Facility ID	173790
Company Name	CLARK PACIFIC
Address	13131 LOS ANGELES ST
	IRWINDALE, CA 91706

Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
595912				Basic	CONCRETE BATCH EQUIPMENT	6/30/2017	APPLICATION REJECTED
595910				Basic	STORAGE TANK CEMENT	6/30/2017	APPLICATION REJECTED
595908				Control	ACTIVATED CARBON ADSORBER OTHER	6/30/2017	APPLICATION REJECTED
548435	G26505	8/23/2013	INACTIVE	Basic	CONCRETE BATCH EQUIPMENT	3/7/2013	PERMIT TO OPERATE GRANTED
548432	G26504	8/23/2013	INACTIVE	Basic	STORAGE TANK CEMENT	3/7/2013	PERMIT TO OPERATE GRANTED
548431	G26503	8/23/2013	INACTIVE	Control	ACTIVATED CARBON ADSORBER OTHER	3/7/2013	PERMIT TO OPERATE GRANTED

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Facility Details

Facility ID	126830
Company Name	HANSON SPANCRETE PACIFIC, INC.
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Status	SOLD

SIC Code	Description
3273	READY-MIXED CONCRETE

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Compliance

Facility ID	126830
Company Name	HANSON SPANCRETE PACIFIC, INC.
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Notices Of Violaton: NONE

Notices To Comply: NONE

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Search Again | Search Results | Facility Details | Equipment List | Compliance | Emissions | Hearing Board | Transportation

Equipment List

Facility ID	126830
Company Name	HANSON SPANCRETE PACIFIC, INC.
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
381010	F38445	3/30/2001	INACTIVE	Basic	CONCRETE BATCH EQUIPMENT	2/8/2001	PERMIT TO OPERATE GRANTED
380990	F39025	4/20/2001	INACTIVE	Basic	CONCRETE BATCH EQUIPMENT	2/8/2001	PERMIT TO OPERATE GRANTED
381007	N9040	3/30/2001	INACTIVE	Basic	SERV STAT STORAGE & DISPENSING GASOLINE	2/8/2001	PERMIT TO OPERATE GRANTED
381003	F38444	3/30/2001	INACTIVE	Basic	STORAGE TANK CEMENT	2/8/2001	PERMIT TO OPERATE GRANTED
381010	F38445	3/30/2001	INACTIVE	Control	ACTIVATED CARBON ADSORBER OTHER	2/8/2001	PERMIT TO OPERATE GRANTED
380990	F39025	4/20/2001	INACTIVE	Control	ACTIVATED CARBON ADSORBER OTHER	2/8/2001	PERMIT TO OPERATE GRANTED
381007	N9040	3/30/2001	INACTIVE	Control	AMINE TREATING	2/8/2001	PERMIT TO OPERATE GRANTED

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Search Again | Search Results | Facility Details | Equipment List | Compliance | Emissions | Hearing Board | Transportation

Facility Details

Facility ID	39859
Company Name	SPANCRETE OF CAL
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Status	SOLD

SIC Code	Description
3273	READY-MIXED CONCRETE

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Compliance

Facility ID	39859
Company Name	SPANCRETE OF CAL
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Notices Of Violaton: NONE

Notices To Comply: NONE

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Equipment List

Facility ID	39859
Company Name	SPANCRETE OF CAL
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
176563	M94991	8/11/1990	INACTIVE	Basic	SERV STAT STORAGE & DISPENSING GASOLINE	10/24/1988	PERMIT TO OPERATE GRANTED
176563	M94991	8/11/1990	INACTIVE	Control	AMINE TREATING	10/24/1988	PERMIT TO OPERATE GRANTED
126914	M45524	8/30/1985	INACTIVE	Basic	CONCRETE BATCH EQUIPMENT	10/29/1984	PERMIT TO OPERATE GRANTED
126914	M45524	8/30/1985	INACTIVE	Control	ACTIVATED CARBON ADSORBER OTHER	10/29/1984	PERMIT TO OPERATE GRANTED
116087	M45523	8/30/1985	INACTIVE	Basic	CONCRETE BATCH EQUIPMENT	10/24/1983	PERMIT TO OPERATE GRANTED
116087	M45523	8/30/1985	INACTIVE	Control	ACTIVATED CARBON ADSORBER OTHER	10/24/1983	PERMIT TO OPERATE GRANTED
115014	M45522	8/30/1985	INACTIVE	Basic	STORAGE TANK CEMENT	9/28/1983	PERMIT TO OPERATE GRANTED
110813	M34261	11/4/1983	INACTIVE	Basic	CONCRETE BATCH EQUIPMENT	5/24/1983	PERMIT TO OPERATE GRANTED
110811	M43426	7/1/1985	INACTIVE	Basic	SERV STAT STORAGE & DISPENSING GASOLINE	5/24/1983	PERMIT TO OPERATE GRANTED
110812	M34260	11/4/1983	INACTIVE	Basic	STORAGE TANK CEMENT	5/24/1983	PERMIT TO OPERATE GRANTED
110811	M43426	7/1/1985	INACTIVE	Control	CONTROL ETO STERILIZATION HOSPITAL	5/24/1983	PERMIT TO OPERATE GRANTED

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Facility Details

Facility ID	760
Company Name	SPANCRETE OF CAL
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Status	OUT OF BUSINESS

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Compliance

Facility ID	760
Company Name	SPANCRETE OF CAL
Address	13131 LOS ANGELES ST IRWINDALE, CA 91706

Notices Of Violaton: NONE

Notices To Comply: NONE

SOUTH COAST AQMD

Facility INformation Detail (FIND)

Search Again | Search Results | Facility Details | Equipment List | Compliance | Emissions | Hearing Board | Transportation

Equipment List

Facility ID	760
Company Name	SPANCRETE OF CAL
Address	13131 LOS ANGELES ST
	IRWINDALE, CA 91706

Appl_Nbr	Permit_Nbr	Issued_Date	Permit_Status	Eq_Type	Equip_Description	Appl_Date	Appl_Status
A47196	P24921	3/12/1968	INACTIVE	Basic	CEMENT CONVEYING		PERMIT TO OPERATE GRANTED
C38550	M25761	7/30/1982	INACTIVE	Basic	CONCRETE BATCH EQUIPMENT		PERMIT TO OPERATE GRANTED
A47196	P24921	3/12/1968	INACTIVE	Control	DRY FILTER (>500 SQ FT)		PERMIT TO OPERATE GRANTED

INSPECTION REPORT

	Los Angeles County Fire Department - Health Hazardous Materials Division **Certified Unified Program Agency - Participating Agency** **East District Office** **5200 Irwindale Avenue, Suite 205** **Irwindale, CA 91706** **Telephone: (626) 430-3260 / Fax: (626) 337-0735** **www.fire.lacounty.gov/hhmd**	

Business: CLARK PACIFIC IRWINDALE		**Inspection Date:** 10/04/2017
Address: 13131 LOS ANGELES ST	**City/State:** IRWINDALE CA 91706	**Telephone:** (626) 962-8752
Owner: ROBERT CLARK	**Email:** rmaddux@clarkpacific.com	
FA #: FA0016629	**Multi-program Inspection #:** GKJF-YGZK	**Inspection Type:** ROUTINE INSPECTION

☐ - NOTICE TO COMPLY/NOTICE OF VIOLATION.

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

Checklist: HW SQG
Checklist: HM

PROGRAM ELEMENT: HAZARDOUS MATERIALS HANDLER

RECORD ID: PR0004748

INSPECTED BY: JEFF ROONEY

OVERALL INSPECTION COMMENTS

Consent Given By:
OOB

PROGRAM ELEMENT: HAZARDOUS WASTE GENERATOR

RECORD ID: PR0028905

INSPECTED BY: JEFF ROONEY

OVERALL INSPECTION COMMENTS

Consent Given By:
OOB

Attention: Non-compliance could result in re-inspection fees, permit revocation, and/or administrative/civil/criminal penalties. A re-inspection may occur at any time to verify compliance. Any time granted for correction of the violation(s) does not preclude any enforcement action by this Department or other agencies.

It is improper and illegal for any County officer, employee or inspector to solicit bribes, gifts, or gratuities in connection with performing their official duties. Improper solicitations include requests for anything of value such as cash, discounts, free services, paid travel or entertainment, or tangible items such as food or beverages. Any attempt by a County employee to solicit bribes, gifts or gratuities for any reason should be reported immediately to either the County manager responsible for supervising the employee or the Fraud hotline at (800) 544-6861 or www.lacountyfraud.org. YOU MAY REMAIN ANONYMOUS.

Los Angeles County Fire Department - Health Hazardous Materials Division
Certified Unified Program Agency - Participating Agency
East District Office
5200 Irwindale Avenue, Suite 205
Irwindale, CA 91706
Telephone: (626) 430-3260 / Fax: (626) 337-0735
www.fire.lacounty.gov/hhmd

Business:	**FA #:**	**Date:**
CLARK PACIFIC IRWINDALE	FA0016629	10/04/2017

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

Signatures

Out of Business

Jeff Rooney
Hazardous Materials Specialist III

PREVIOUS INSPECTIONS

Activity Date	PE	Rercord ID	Serial No.	Group Code	Service	Result	Action	Activity Min	Travel Min	Inspector ID
08/19/2016	1004	PR0028905	DA0849876		052	00	00	40	0	EE0000171
08/19/2016	3003	PR0004748	DA0849878		052	00	00	40	0	EE0000171
08/22/2016	1004	PR0028905	DA0850113		051	00	00	35	0	EE0000171
08/22/2016	3003	PR0004748	DA0850115		051	00	00	35	0	EE0000171
08/22/2016	1004	PR0028905	DA32TOWPV	NDFE-XWQG	001	02	01	70	15	EE0000171
08/22/2016	3003	PR0004748	DAHAPNDL0	NDFE-XWQG	001	02	01	70	15	EE0000171
09/30/2016	3003	PR0004748	DALCGE4CU		053	01	02	30	0	EE0000171
10/04/2017	1004	PR0028905	DALWCQK1C	GKJF-YGZK	001	01	00	25	25	EE0000143
10/04/2017	3003	PR0004748	DANSO2LED	GKJF-YGZK	001	01	00	30	0	EE0000143
10/04/2017	0200	CO0030628	DA0888598		003	17	17	30	0	EE0000143
10/04/2017	1004	PR0028905	DA0888904		012	07	09	15	0	EE0000143
10/04/2017	3003	PR0004748	DA0888905		012	08	09	15	0	EE0000143

VIOLATIONS LIST

Open	Activity Date	Program Element	Viol Status	Service	Result	Action	Violation Degree	Comply on Date	Description
	08/22/2016	1004	OU	001	02	01	Minor	08/22/2016	Generator properly labeled all containers or tanks containing hazardous waste as required
	08/22/2016	1004	OU	001	02	01	Minor	08/22/2016	Generator maintains and operates the facility to minimize the possibility of fire/explosion/release
	08/22/2016	3003	OU	001	02	01	Minor	09/02/2016	Adequate completion and electronic submission of annotated Site Map with all required content
	08/22/2016	3003	OU	001	02	01	Minor	09/02/2016	Adequate completion and electronic submission of Emergency Response Plan and procedures

Los Angeles County Fire Department - Health Hazardous Materials Division
Certified Unified Program Agency - Participating Agency
East District Office
5200 Irwindale Avenue, Suite 205
Irwindale, CA 91706
Telephone: (626) 430-3260 / Fax: (626) 337-0735
www.fire.lacounty.gov/hhmd

Business:	**FA #:**	**Date:**
CLARK PACIFIC IRWINDALE	FA0016629	10/04/2017

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

LOG SHEET

INSPECTOR FIELD NOTES

Thursday, October 05, 2017 8:38 AM - JEFF ROONEY

Facility is OOB per CO0030628

Email from operator claiming OOB since 5/2017

We closed this facility in May. I have been trying to close the CERS account since then with no luck. Can you please let me know how to close the permit.

Richard Maddux
Senior Environmental Specialist
(916) 371-0305 tel
(707) 849-1115 mobile
40600 County Road 18C Woodland, CA 95691

--10/4/17-facility observed locked and secured with fencing. Photos of lot taken. office building locked and secured. NO new business on site. NO HM or HW observed in plain veiw. PERMITS will be inactivated eff 5/1/17 according to email sent from Richard Maddux.

INSPECTION REPORT

	Los Angeles County Fire Department - Health Hazardous Materials Division **Certified Unified Program Agency - Participating Agency** **East District Office** **5200 Irwindale Avenue, Suite 205** **Irwindale, CA 91706** **Telephone: (626) 430-3260 / Fax: (626) 337-0735** **www.fire.lacounty.gov/hhmd**	

Business: CLARK PACIFIC IRWINDALE		**Inspection Date:** 08/22/2016
Address: 13131 LOS ANGELES ST	**City/State:** IRWINDALE CA 91706	**Telephone:** (626) 962-8752
Owner: ROBERT CLARK	**Email:** rmaddux@clarkpacific.com	
FA #: FA0016629	**Multi-program Inspection #:** NDFE-XWQG	**Inspection Type:** ROUTINE INSPECTION

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

Checklist: HW SQG
Checklist: HM

PROGRAM ELEMENT: HAZARDOUS MATERIALS HANDLER

RECORD ID: PR0004748

INSPECTED BY: PAOLO ZENAROSA

Adequate completion and electronic submission of Emergency Response Plan and procedures

MINOR

COMPLY BY: 9/21/2016

☒ **OUT** ☐ **COS** ☐ **RPT**

Violation Description:
Failure to establish and electronically submit adequate emergency response procedures for a release or threatened release of a hazardous material. HSC 6.95 25505(a)(3), 25508(a)(1); 19 CCR 4 2658

Violation Comment:
OBSERVATION: The Emergency Response plan and procedures submitted to the CUPA did not include the name of the nearest medical / hospital facility and phone number.

CORRECTIVE ACTION: Revise the emergency response plan and procedures to include all required content and submit electronically in the California Environmental Reporting System (CERS).

Adequate completion and electronic submission of annotated Site Map with all required content

MINOR

COMPLY BY: 9/21/2016

☒ **OUT** ☐ **COS** ☐ **RPT**

Violation Description:
Failure to complete and electronically submit a site map with all required content. HSC 25505(a)(2), 25508(a)(1)

Violation Comment:
OBSERVATION: The annotated site map submitted to the CUPA does not include:
- location of compressed gases and oil storage areas.
- location of fire extinguishers.

CORRECTIVE ACTION: Revise the annotated Site Map to include all required content and submit electronically in the California Environmental Reporting System (CERS).

Business:	FA #:	Date:
CLARK PACIFIC IRWINDALE	FA0016629	08/22/2016

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

OVERALL INSPECTION COMMENTS

Consent Given By:
Ken Jarman, Plant Manager.

PROGRAM ELEMENT: HAZARDOUS WASTE GENERATOR

RECORD ID: PR0028905

INSPECTED BY: PAOLO ZENAROSA

Generator maintains and operates the facility to minimize the possibility of fire/explosion/release

MINOR

COS: 8/22/2016

☒ **OUT** ☒ **COS** ☐ **RPT**

Violation Description:
Failure to maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment. 22 CCR 12 66262.34(d)(2); 40 CFR 1 262.34(d)(4), 265.31

Violation Comment:
OBSERVATION: Facilities shall be maintained and operated to minimize the possibility of a fire, explosion, or release of hazardous waste to air, soil, or surface water which could threaten human health or the environment.

Observed unmanaged oil spill in the secondary containment of the used oil accumulation area. Operator corrected on site.

CORRECTIVE ACTION: Immediately [fix leak, clean stains, etc.], and manage according to Title 22 hazardous waste regulations. Submit a statement and supporting documentation explaining how this waste was managed by 9/21/16.

Generator properly labeled all containers or tanks containing hazardous waste as required

MINOR

COS: 8/22/2016

☒ **OUT** ☒ **COS** ☐ **RPT**

Violation Description:
Failure to properly label hazardous waste accumulation containers and portable tanks with the following requirements: "Hazardous Waste", name and address of the generator, physical and chemical characteristics of the Hazardous Waste, and starting accumulation date. 22 CCR 12 66262.34(f)

Violation Comment:
OBSERVATION: All hazardous waste tanks shall be marked with the words “Hazardous Waste” and the accumulation start date.

Observed no label on the 55 gal drum of used antifreeze in the waste accumulation area. Operator corrected on site.

CORRECTIVE ACTION: Immediately ensure that all hazardous waste tanks are marked with the required information.

Los Angeles County Fire Department - Health Hazardous Materials Division
Certified Unified Program Agency - Participating Agency
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Irwindale, CA 91706
Telephone: (626) 430-3260 / Fax: (626) 337-0735
www.fire.lacounty.gov/hhmd

Business:	**FA #:**	**Date:**
CLARK PACIFIC IRWINDALE	FA0016629	08/22/2016

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

OVERALL INSPECTION COMMENTS

Consent Given By:
Ken Jarman, Plant Manager.

Attention: Non-compliance could result in re-inspection fees, permit revocation, and/or administrative/civil/criminal penalties. A re-inspection may occur at any time to verify compliance. Any time granted for correction of the violation(s) does not preclude any enforcement action by this Department or other agencies.

It is improper and illegal for any County officer, employee or inspector to solicit bribes, gifts, or gratuities in connection with performing their official duties. Improper solicitations include requests for anything of value such as cash, discounts, free services, paid travel or entertainment, or tangible items such as food or beverages. Any attempt by a County employee to solicit bribes, gifts or gratuities for any reason should be reported immediately to either the County manager responsible for supervising the employee or the Fraud hotline at (800) 544-6861 or www.lacountyfraud.org. YOU MAY REMAIN ANONYMOUS.

Signatures

Ken Jarman
Plant Manager

Paolo Zenarosa
Hazardous Materials Specialist II

PREVIOUS INSPECTIONS

Activity Date	PE	Rercord ID	Serial No.	Group Code	Service	Result	Action	Activity Min	Travel Min	Inspector ID
08/19/2016	1004	PR0028905	DA0849876		052	00	00	40	0	EE0000171
08/19/2016	3003	PR0004748	DA0849878		052	00	00	40	0	EE0000171
08/22/2016	1004	PR0028905	DA0850113		051	00	00	35	0	EE0000171
08/22/2016	3003	PR0004748	DA0850115		051	00	00	35	0	EE0000171
08/22/2016	1004	PR0028905	DA32TOWPV	NDFE-XWQG	001	02	01	70	15	EE0000171
08/22/2016	3003	PR0004748	DAHAPNDL0	NDFE-XWQG	001	02	01	70	15	EE0000171
09/30/2016	3003	PR0004748	DALCGE4CU		053	01	02	30	0	EE0000171
10/04/2017	1004	PR0028905	DALWCQK1C	GKJF-YGZK	001	01	00	25	25	EE0000143
10/04/2017	3003	PR0004748	DANSO2LED	GKJF-YGZK	001	01	00	30	0	EE0000143
10/04/2017	0200	CO0030628	DA0888598		003	17	17	30	0	EE0000143
10/04/2017	1004	PR0028905	DA0888904		012	07	09	15	0	EE0000143
10/04/2017	3003	PR0004748	DA0888905		012	08	09	15	0	EE0000143

Los Angeles County Fire Department - Health Hazardous Materials Division
Certified Unified Program Agency - Participating Agency
East District Office
5200 Irwindale Avenue, Suite 205
Irwindale, CA 91706
Telephone: (626) 430-3260 / Fax: (626) 337-0735
www.fire.lacounty.gov/hhmd

Business:	**FA #:**	**Date:**
CLARK PACIFIC IRWINDALE	FA0016629	08/22/2016

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

VIOLATIONS LIST

Open	Activity Date	Program Element	Viol Status	Service	Result	Action	Violation Degree	Comply on Date	Description
	08/22/2016	1004	OU	001	02	01	Minor	08/22/2016	Generator properly labeled all containers or tanks containing hazardous waste as required
	08/22/2016	1004	OU	001	02	01	Minor	08/22/2016	Generator maintains and operates the facility to minimize the possibility of fire/explosion/release
	08/22/2016	3003	OU	001	02	01	Minor	09/02/2016	Adequate completion and electronic submission of annotated Site Map with all required content
	08/22/2016	3003	OU	001	02	01	Minor	09/02/2016	Adequate completion and electronic submission of Emergency Response Plan and procedures

LOG SHEET

9-29-2016: Comandante
Reviewed file; follow up required

10-27-2016: Comandante
Reviewed file; no further action required

INSPECTOR FIELD NOTES

Inspection Notes
PZ. Paolo Zenarosa
Date: 8/22/16

I. OPENING CONFERENCE

Nature of business: CLARK PACIFIC. The facility is a concrete products company that specializes in cement module molding. The facility has numerous large molds for cement to pour and serve as mass production of cement modules for large construction projects. The walkthrough was conducted by Ernie Figueroa after Ken Jarman provided consent for the inspection.

Consent to conduct the inspection was granted by: Ken Jarman, Plant Manager.

Additional individuals involved in the inspection (if applicable): Ernie Figueroa, Maintenance Lead Staff

Program Element(s): The facility was verified to be a:
Hazardous Waste Generator with 140 employees corresponding to PE 1004;
Hazardous Materials Handler with volume thresholds corresponding to PE 3003.

II. WALKTHROUGH

Process(es):

HazMat Observed On Site:

- HM/volume/hazard/location
- Oxygen / 1800 cuft / oxidizer / gas storage area
- Acetylene / 1000 cuft / flammable / gas storage area
- Waste oil / 400 gal tank / toxic / HW accumulation area
- New oil / 600 gal / toxic / Oil storage area
- Pozzolith / 400 gal / toxic / batch plant
- Glenium / 1500 gal / toxic / batch plant
- All other HM reported in CERS have been verified accurate on site.

HazWaste Observed On Site:
- Oil change of equipment and vehicles > generates HW used oil > stored in a 400 gal tank > disposal docs reviewed ok.
- Spill control and solvent removal > generates HW solids, rags and spent absorbent > stored in 55 gal container > disposal docs ok.
- Parts wash > generates spent parts wash > stored in a 30 gal recirculating tank > disposal docs reviewed ok.
- Coolant change > generates HW used antifreeze > stored in a 55 gal container > disposal docs ok.
- Water washing of equipment and maintenance area > generates waste water > stored in sump and then passed through clarifier > reviewed non HW docs for sludge removal from clarifier.

III. DOCUMENTS

HazMat - CERS Review:
- Annual Recertification -ok
- Facility Information – ok
- Emergency Contact Information verified and accurate –ok
- Reported inventory matches observed quantities –ok
- Site Map with all required content –nok, missing info, NOV.
- Emergency Response and Contingency Plan - nok, missing info, NOV.
- Employee Training Plans –ok

HazWaste
- Active EPA ID - ok
- CUPA Permit - ok
- Hazardous Waste Manifests –
  - #015377092JJK, 6/9/16 by Industrial Waste Utilizationn Inc, waste solids
  - #015377087, 6/6/16 by Stress Less Express LLC, used oil 200 gal
- HW Container Weekly Inspection Log (if any) – nok, NOV.

IV. CLOSING CONFERENCE
- The inspection report and inspection findings were explained to the operator/owner.
- The owner/operator was advised of proper hazardous waste management, hazardous materials handling, record-keeping, permit payment, and good business practices.
- The owner/operator was advised to update, review and submit any and all information missing in the California Environmental Reporting System (CERS) online system.
- The owner/operator was advised to report to the CUPA any and all incidents of hazardous waste, hazardous materials and petroleum products that had spilled into off-site areas from the facility.
- The owner/operator was advised to contact the CUPA for any and all future questions regarding hazardous materials and if any change were to be made to their manufacturing processes, ownership changes and/or changes to SPCC Plans.

V. VIOLATIONS

NOV issued for

- Missing info on CERS ERP,
- Missing info on CERS site map
- No label on HW used antifreeze container, COS.
- Unmanaged oil spills in HW accumulation area, COS.

COUNTY OF LOS ANGELES FIRE DEPARTMENT
HEALTH HAZARDOUS MATERIALS DIVISION

LOG SHEET

BUSINESS NAME: Clark Pacific	CERS 10282897 FA 0016629
ADDRESS: 13131 Los Angeles CA 91706	

DATE	HMS INIT.	FINDINGS/ REMARKS
11-14-12	mm	003 CO*0024223 Justified - new owner
		001 NOV issued for CCP. No HW at this
		time. Pls return. PHI has original file.
1/28/13	Bm	Reviewed File . Returned

County of Los Angeles • Fire Department
Prevention Bureau
Health Hazmat Division
5110 N. Peck Road
El Monte, CA 91732

LOG SHEET

Page _____ of _____

Site Name: | #

Address:

Date	HMS Init.	Findings /Remarks
6/23/04	BV	01 - HM HW — Inspection was conducted
7/20/04	BJW	Reviewed file
1-28-10	MM	001 HM HW - No sign violation at time of inspection
2/3/10	BJW	Reviewed File

OWNER FILE INFORMATION

DATE PRINTED: 12/11/2012 1:04:15PM BY:

Owner ID: OW0061689

Tax ID : 68-0262848
Drivers License:

Owner Name: CLARK PACIFIC
Owner DBA: CLARK PACIFIC
Owner Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Ownership Type:
Work/Business Phone: 626-962-8751
Billing/Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
ATTN/Care of: KEN JARMAN

FACILITY FILE INFORMATION

Facility ID: FA0016629

Account ID: AR0060518

Facility Name: CLARK PACIFIC
No. of Employee: 140
Site Location: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Phone: 626-962-8751
Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Operator/Care of: KEN JARMAN
Email Address: KEN.JARMAN@HANSON.COM
District: E - EAST
City Code: IRWN
CUPA Jurisdiction: CO
Operation Hours: M-SAT 5AM-7PM
SIC Code: 3272
Business Type / Code: 01
Station (Code 1): 029
D & B #:
Date 1 (D1):

GENERAL HEALTH PROGRAM ELEMENTS

Record ID #	Program Element	Current Status	# of Unit	EPA #	Effective Date D1 (Beg.) & C1 (End)	Last Inspection Date
PR0004748	3003 - HM HANDLER, FEE GROUP 03	Active, billable			06/30/12	11/15/2012
PR0028905	1004 - HW GEN, 101-500 EMPLOYEES	Active, billable			06/30/12	11/15/2012
PR0050276	7124 - PA, DPW, UST	Inactive, non-billable	2		02/20/90	
PR0075129	8040 - CALIFORNIA ELECTRONIC REPORTING SURCHARGE	Inactive, non-billable				

LA County Fire Department
COMPLAINT FORM

Entered By : EE0000842 - CO, AUDREY

Report # : 5602

V100304

DATE: November 13, 2012

FROM: EE0000842 - CO, AUDREY
FMD - SB1082 REVENUE MGMT SECTION
PHN 323 881-2444; FAX 323 415-5742

COMPLAINT ID: CO0024223

FA0016629 - HANSON STRUCTURAL PRECIAST

Tax ID 68 0262848

OWNER INFORMATION	FACILITY INFORMATION
OW0016629 - HANSON PIPE & PRODUCTS	FA0016629 - HANSON STRUCTURAL PRECIAST
DBA : HANSON STRUCTURAL PRECIAST	Location : AR0016630
Site Address : ~~3500 MAPLE AVE # 1180~~ ~~DALLAS, TX 75219~~	Site Address : 13131 LOS ANGELES ST IRWINDALE, CA 91706
Mailing Address: 13131 LOS ANGELES ST IRWINDALE,	Mailing Address: 13131 LOS ANGELES ST IRWINDALE, CA 91706
Phone: Hm: 214-525-5500	Phone: 1st: 626-962-8751

COMPLAINT ID NUMBER: CO0024223

Service Code: _____
Action Code: _____
Result Code: _____

COMPLAINT MODE : FMD REFERRAL

District : E

SOURCE OF REQUEST:

Complainant: Complainant Not Specified
Address: Address Not Specified

Home/Cell Phone : Phone Not Specified
Work Phone : Phone Not Specified
Email Address :

DESCRIPTION: Please verify your file the changes correctly.

STATUS : **12 - CHANGE IN OWNER**

FY12/13 BILL (PAID) RET BY CUST W/ NOTE INFORMING OF CHANGE IN OWNERSHIP AS OF 8/21/12:

FR: HANSON PIPE & PRODUCTS DBA: HANSON STRUCTURAL PRECIAST
TO: CLARK PACIFIC DBA: CLARK PACIFIC

PLS VERIFY BUS. STATUS & UPDTE YOUR FILES AS NEEDED. THANK YOU.

		Date / Time
Received by :	EE0000842 - CO, AUDREY	10/9/2012 10:04:01
Assigned to :	**EE0000125 - MOLINA, MILTON**	10/9/2012 10:51:05

List dates, times, types of notices, names, address and phone numbers of people involved. Describe conditions and actions taken

Date : _____
Time In : _____
Time Out : _____
Hrs/Min : _____

11-14-12 3 month ago changed to Clark Pacific. Complaint Justified New owner Update Submitted

** PLEASE INDICATE THE EFFECTIVE DATE NOT THE SITE VISIT DATE**

Date run : 11/15/2012 2:14:44PM
Run by :

FA0016629 HANSON STRUCTURAL PRECIAST

A County Fire Department
Facility Information Report

V121108

OWNER FILE INFORMATION

☐ Ownership change: _____ Effective Date ☐ Update ☐ Out of Business _____ Effective Date

Owner ID: OW0016629 Clark Pacific 68-0262848
Owner Name: ~~HANSON PIPE & PRODUCTS~~ Tax ID : ~~95-3807-406~~
Owner DBA: ~~HANSON STRUCTURAL PRECIAST~~ Drvr Liens :
Owner Address: ~~3500 MAPLE AVE # 1180~~ 13131 Los Angeles St
~~DALLAS, TX 75219~~ Irwindale CA 91706
Work/Business Phone: ~~214-525-5500~~
Billing/Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
ATTN/Care of: KEN JARMAN
Ownership Type:

FACILITY FILE INFORMATION

Facility ID: FA0016629 Account ID: AR0016630
Facility Name: HANSON STRUCTURAL PRECIAST 40518
No. of Employee: 140
Site Location: 13131 LOS ANGELES ST OW 61689
IRWINDALE, CA 91706 **EPA ID**
Phone: 626-962-8751 **CERS #**
Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Operator/Care of: KEN JARMAN E-Mail : KEN.JARMAN@HANSON.COM
District: E - EAST
City Code: IRWN IRWINDALE
CUPA Jurisdiction: CO
Operating Hours: M-SAT 5AM-7PM
SIC Code: 3272 - Concrete products, nec
Business Type / Code: 01 CORPORATION
Station: 029

GENERAL HEALTH PROGRAM ELEMENTS

Record ID	Current Program Element	Current Status	# of Unit	Effective Date Beg.	Effective Date End	Changes: Program Element	Changes: Status
PR0004748	3003 - HM HANDLER, FEE GROUP 03	Active, billable		07/14/97			
PR0028905	1004 - HW GEN, 101-500 EMPLOYEES	Active, billable		01/01/00			
[illegible]	[illegible]	Active		6/30/12			

Add Program Element: 3003 (Program Element) 01 (Status) 6-30-12 (Effective Date) 1004 (Program Element) 01 (Status) 6-30-12 (Effective Date)

CA Waste Code					
RCRA Waste Code					
AMOUNT per quarter					
UNITS (PGTY) Pounds, Gallons, Tons, Yards					

CONSENT GIVEN BY: Connie Deitrick INSPECTOR SIGNATURE: [signature] EMPLOYEE ID: 125

1st DATE & TIME OF INSPECTION: 11-14-12 2nd DATE & TIME OF INSPECTION:

3rd DATE & TIME OF INSPECTION:

Field Notes

LIST ORDER OF INSPECTION AS FOLLOWS: I. OPENING CONFERENCE II. WALK THROUGH III. DOCUMENTS IV. CLOSING CONFERENCE V. VIOLATIONS

On November 14, 2012 a routine hazardous material & waste inspection was conducted at 13131 Los Angeles St in the City of Irwindale. Complaint # CO CO24223 was also conducted and found to be justified. New owner is Clark Pacific. All employees are the same. Update Submitted

Facility remained with the same chemical inventory & waste
No manifest under new owner yet
NOV issued to submit CCP & inventory.

CONSENT GIVEN BY: _____ INSPECTOR SIGNATURE: _____ EMPLOYEE ID: _____

1st DATE & TIME OF INSPECTION: _____ 2nd DATE & TIME OF INSPECTION: _____

3rd DATE & TIME OF INSPECTION:

COUNTY OF LOS ANGELES FIRE DEPARTMENT
HEALTH HAZARDOUS MATERIALS DIVISION

INSPECTION REPORT

CERTIFIED UNIFIED PROGRAM AGENCY • PARTICIPATING AGENCY
5110 NORTH PECK ROAD, EL MONTE, CA 91732
PHONE: (626) 450-7450 FAX: (626) 448-0892

BUSINESS: Clark Pacific	OWNER: Clark Pacific	DATE: 11-14-12
ADDRESS: 13131 Los Angeles St Irwindale CA 91706		FACILITY ID: FA0016629

The following requirements, if applicable, have been inspected. This document constitutes a summary of violations and notice to comply if the violation column (V) is checked. *References: Titles 19 and 22 of the California Code of Regulations (CCR); Chapters 6.5, 6.67, and 6.95 of the California Health and Safety Code (HSC); Titles 11 and 12 of the Los Angeles County Code (Co Ord); and Title 40 Code of Federal Regulations (CFR).* ***NOTE:*** *For all CFR sections refer to CCR 66262.34(d)(2) for applicability.*

INSPECTION TYPE: ☐ INITIAL ☐ RE-INSPECTION ☐ OTHER:

	V	HAZARDOUS WASTE (HW) GENERATOR	SECTION		V	HAZARDOUS WASTE GENERATOR	SECTION
1		HW accumulation time	CCR 66262.34(a-d)	27		HW analysis retained for 3 years	CCR 66262.40(c)
2		Satellite accumulation	CCR 66262.34(e)	28		HW determination	CCR 66262.11
3		HW labeling	CCR 66262.34(f)	29		Proper disposal of HW	HSC 25189.5(a)
4		Hazardous materials storage and labeling	CCR 66261.2(f)	30		Reckless management of HW	HSC 25189.6
5		Containers leaking or not in good condition	CCR 66265.171 • •CFR 265.171	31		Quarantine order	HSC 25187.6
6		Compatibility of waste with containers	CCR 66265.172 • •CFR 265.172	32		Maintain/operate to prevent release/fire	CCR 66265.31 • •CFR 265.31
7		HW containers closed	CCR 66265.173(a) • •CFR 265.173(a)	33		Required equipment and maintenance	CCR 66265.32-.33 • •CFR 265.32-.33
8		Container inspection – weekly	CCR 66265.174 • •CFR 265.174	34		Required aisle space	CCR 66265.35 • •CFR 265.35
9		Separation of incompatibles	CCR 66265.177 • •CFR 265.177	35		Personnel training	CCR 66265.16 • •CFR 262.34(d)(5)(iii)
10		Tank overflow and spill prevention	CCR 66265.194 • •CFR 265.201(b)	36		Emergency information posting [SQGs]	CFR 262.34(d)(5)(ii)
11		Tank inspection	CCR 66265.195 • •CFR 265.201(d)	37		Contingency plan [LQGs]	CCR 66265.51
12		Tank system management	CCR 66265.190-.202 • •CFR 265.201	38		Source reduction requirements [LQGs]	CCR 67100.3
13		Empty containers	CCR 66261.7	39		Biennial report requirements [RCRA LQGs]	CCR 66262.40-.41
14		Used oil management	HSC 25250.4	40		Closure requirements [LQGs]	CCR 66265.111 / .114
15		Used oil / fuel filter management	CCR 66266.130 / HSC 25250.22	41		Site assessment requirements	HSC 25187(a)(1)
16		Used battery management	CCR 66266.81	42		Excluded recyclable material management	HSC 25143.2 / .9
17		Contaminated textile management	HSC 25144.6	43		Recyclable material report	HSC 25143.10
18		EPA ID number [submit DTSC form 1358]	CCR 66262.12	44		Universal waste management	CCR 66273.1
19		HW manifest complete	CCR 66262.23(a)	45		Other violation(s)	
20		Manifest copies to DTSC	CCR 66262.23(a)(4)		V	HAZARDOUS MATERIALS HANDLER	SECTION
21		Manifest copies retained for 3 years	CCR 66262.40(a)	50	✓	HMBP established and implemented	HSC 25503.5
22		Consolidated manifest requirements	HSC 25160.2	51	✓	HMBP submitted; updated/accurate	HSC 25505
23		Manifest exception reporting	CCR 66262.42	52		Regulated substance registration	HSC 25533(a)
24		HW transported with manifest	CCR 66262.20		V	ABOVEGROUND PETROLEUM STORAGE	SECTION
25		HW transported by registered hauler	HSC 25163(a)	60		SPCC plan	HSC 25270.4.5(a)
26		Land disposal restriction requirements	CCR 66268.7(a)	70		**PERMIT REQUIRED** – Submit UP Forms	Co Ord 12.50.075

☐ **NO SIGNIFICANT VIOLATIONS OBSERVED ON DATE OF INSPECTION.**
☑ **NOTICE TO COMPLY: THE VIOLATION(S) CITED MUST BE CORRECTED BY** _____.
☐ **RETURN CERTIFICATION OF COMPLIANCE FOUND ON BACK OF THIS NOTICE.**

Attention: The requirements checked are in violation. Non-compliance could result in re-inspection fees, permit revocation, and/or administrative/civil/criminal penalties. A re-inspection may occur at any time to verify compliance. Any time granted for correction of the violation(s) does not preclude any enforcement action by this Department or other agencies.

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(2) Provide inventory for hazardous materials

Inspected By: Milton Molina	Consent Given By: Connie Deitrick	Authorized Representative's Signature: Connie Deitrick

Inventory / CCP Tracking Report

Printed By: BEVIE
Printed Date: 1/27/2011

Facility: FA0016629 **HANSON STRUCTURAL PRECIAST**
13131 LOS ANGELES ST
Phone: 626-962-8751
IRWINDALE **91706**

Owner: OW0016629 **CareOf:** KEN JARMAN
HANSON PIPE & PRODUCTS **DBA:** HANSON STRUCTURAL PRE
13131 LOS ANGELES ST
IRWINDALE CA 91706
Work Phone: 214-525-5500
Home Phone: 214-525-5500

Cert Mail:
Dunn / Brad: 008347569

SIC: 3272 - Concrete products, nec

Program Element: 3003 HM HANDLER, FEE GROUP 03
01

Previous Record: *TBA*

District: EAST **Station:** 029

Inventory

*** Current Status**

H

Inventory Tracking Milestones

		Date Completed
Report Year	2011	1/27/2011
Package Sent Date	11/16/2010	
Package Received Date	12/22/2010	
Correction Notice Sent Date		
Correction Received Date		
Note	KENNETH R JARMAN, OWNER OPERATOR, 12/20/2010	

To Do Next

Forward to District Office

CCP

*** Current Status**

H

CCP Tracking Milestones

Report Year	2007
Package Received Date	11/25/2009
Correction Notice Sent Date	
Correction Received Date	

Cal-ARP section -- RS: No

A. Package Sent B. Package Received D. Correction Notice Sent E. Correction Received
F. Identified with Chemical Change H Accepted w/o Change I. Chemical Information Updated R Undeliverble Mail

Last Touched Date: 1/27/11 By: BCO
Report #5307_RS V. 110106

FEDEX # 58100

LOS ANGELES COUNTY FIRE DEPARTMENT
HEALTH HAZARDOUS MATERIALS DIVISION
5825 Rickenbacker Road, Commerce, CA 90040

03

BUSINESS PLAN ANNUAL RENEWAL CERTIFICATION

Hazardous Materials Inventory Statement (HMIS)

I certify that the attached HMIS reflects the handling of hazardous materials for the reporting year in accordance with the following conditions: (Please check all that apply).

- ☐ **Delete:** Write "delete" on the HMIS next to any previously disclosed hazardous materials that are no longer used.
- ☐ **Revise:** Write the correct amounts, locations, or container type on the HMIS to reflect the accuracy of any previously reported hazardous materials.
- ☐ **EPCRA Compliance:** Fill in the EPCRA field with your signature on the HMIS for any hazardous material type and quantity identified on 40 CFR Part 355, Appendix A—The List of Extremely Hazardous Substances and Their Threshold Planning Quantities.
- ☐ **Add:** Complete one **Hazardous Materials Inventory—Chemical Description Form** to add each hazardous materials that you have not previously disclosed. Submit one form per chemical.
- ☑ **No Change: Hazardous Materials Inventory Statement** (HMIS) is accurate and complete.

Consolidated Contingency Plan (CCP)

An initial submittal of the CCP is required when you start handling hazardous materials. At least once every 3 years after the initial submittal, the CCP needs to be reviewed and certified that the file with your agency is accurate and current in accordance with the following conditions:

- ☐ **If the Owner/Operator page indicates "CCP Certification required"** complete and submit a new CCP.
- ☐ **Modification:** Significant changes in facility personnel or operations required a revision of the CCP. Complete and submit changes of your CCP with this form. Indicate changes by crossing out old information, and writing in the correct information.
- ☐ **Lost:** Complete and submit any parts of your CCP that were lost or damaged.
- ☑ **No Change:** There have not been any significant changes in the facility's personnel and operations that require a revision to the current CCP.

Received
DEC 22 2010
HHMD - Data Ops

Cal-ARP Program

I reviewed the threshold quantities in Section 2770.5 of Title 19 of the California Code of Regulations and certify that any regulated substance on the attached HMIS accords with the following registration requirement:

- ☐ **Add:** Complete the **Cal-ARP Program Regulated Substance Registration** form only if the regulated substance is at or above the threshold quantity (TQ). Submit one form per chemical.
- ☑ **No Change:** The previously submitted registration for regulated substance(s) is accurate.

ANNUAL CERTIFICATION

I certify that the information submitted herein is complete and accurate. Also, no hazardous materials subject to the inventory requirements of Chapter 6.95 of the Health and Safety Code are being handled that are not listed on the most recently submitted annual inventory form.

Kenneth R Jarman		[signature]
Print Name of Document Preparer	Print Name of Owner/Operator	Signature of Owner/Operator
Hanson Structural/Precast	13131 Los Angeles St Irwindale, CA 91706	12-20-2010
Business Name	Site Address	Date

FA0016629 029
HANSON STRUCTURAL PRECIAST

13131 LOS ANGELES ST

Submit this packet to the above address before January 3, 2011 to avoid a late submittal penalty of $331 or other enforcement options. Certified Mail advised. Do not submit any fees with this packet.
Obtain unified program forms from our website at http://www.fire.lacounty.gov/HealthHazMat/HHMDForms.asp or from our Data Operations Unit at (323) 890-4000.

Date run : 11/2/2010 7:58:43AM

FA0016629 0

Los Angeles County Fire Department

Owner/Operator Identification

Beginning Date: 1/1/2011 Ending Date: 12/31/2011

Report #5314

V101026

OWNER FILE INFORMATION

Please clearly make changes/corrections.

Owner ID: OW0016629

Owner Name: HANSON PIPE & PRODUCTS Dvr Lic No: State:

Owner DBA: HANSON STRUCTURAL PRECIAST Tax ID : 95-3807-406

Owner Address: 3500 MAPLE AVE # 1180 Owner Date of Birth:

DALLAS, TX 75219

Work/Business Phone: 214-525-5500

Billing/Mailing Address: 13131 LOS ANGELES ST

IRWINDALE, CA 91706

ATTN/Care of: ~~DWIGHT EDWARDS~~ Ken Jarman

FACILITY FILE INFORMATION

On Site Regulated Substances : Yes ___ No ___

Facility ID: FA0016629

Facility Name: HANSON STRUCTURAL PRECIAST

Site Location: 13131 LOS ANGELES ST

IRWINDALE, CA 91706

Phone: 626-962-8751

Mailing Address: 13131 LOS ANGELES ST

IRWINDALE, CA 91706

Operator/Care of: ~~DWIGHT EDWARDS~~ Ken Jarman **E-Mail Address:** ken.jarman@hanson.com

SIC Code: 3272

Operating Hours: Days: M-SAT Hours: 5AM-7PM

Station: 029

Date First Became Operational:

ENVIRONMENTAL CONTACT INFORMATION

Contact Name: DWIGHT EDWARDS Phone : 626-962-8751

13131 LOS ANGELES ST

IRWINDALE CA 91706

Dun & Bradst.: 00-834-7569

Received

DEC 2 2 2010

HMD - Data Ops

EMERGENCY CONTACT INFORMATION

	PRIMARY CONTACT:	SECONDARY CONTACT:
Name :	~~PABLO ORTIZ~~ Rick Bradley	~~DWIGHT EDWARDS~~ Ken Jarman
Title :	SUPERVISOR	PLANT MANAGER
Business Phone :	626-962-8751 ex 223	626-962-8751 ex 240
24 - Hour Phone :	~~562-942-0352~~ 626-255-6044	~~760-242-2917~~ 619-843-8113
Pager # :	Not Specified	Not Specified

ADDITIONAL INFORMATION

H 1-Dec-09

ASSESSORS PARCEL NUMBER: 8535-020-007

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this inventory and believe the information is true, accurate and complete.

Print Name of Document Preparer : Ken Jarman

Signature of Owner/Operator : Wayne M Edwards

Date: 12-20-2010

CCP Status: 2007 11/25/2009 Received

Date: 11/2/2010

Hazardous Materials Inventory Statement

Report #5316
Run By : RMARTINEZ

Business Name: **HANSON STRUCTURAL PRECIAST**
(Same as Facility Name or DBA) 13131 LOS ANGELES ST IRWINDALE

Chemical Location: Unit # 2
(Building/Storage Area)

Facility ID # : FA0016629

1. Haz. Class	2. Grid Coordinate	3. Common Name	Trade Secret	4. Hazardous Components (For mixture only) Chemical Name	% Weight	EHS	CAS #	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
	F-5	TRIETHANELAMINE		TRIETHANOLAMINE	10.0		102-71-6	M (M: Mix P: Pure W: Waste)	1,000	1,000	1,000.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	fire, reactive, presure rels., Y acute health, chronic heal., radioactive
Sub-Location	13131 LA ST							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* A	Waste Code:	Amt:		
If EPCRA, sign :															
RS: N	CAS #														
	G-5	SODIUM DODECYLBENZENE SULFONATE		SODIUM DODECYLBENZENE SULFONATE	0.0		25155-30-0	M (M: Mix P: Pure W: Waste)	1,000	1,000		A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	fire, reactive, presure rels., Y acute health, chronic heal., radioactive
Sub-Location	13131 LA ST							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* A	Waste Code:	Amt:		
If EPCRA, sign :															
RS: N	CAS #														
	F-5	WRDA 79		TRIETHANOLAMINE	6.0		102-71-6	M (M: Mix P: Pure W: Waste)	1,000	1,000	1,000.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	fire, reactive, presure rels., acute health, chronic heal., radioactive
Sub-Location	13131 LA ST IRWINDALE CA 91706							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* A	Waste Code:	Amt:		
If EPCRA, sign :															
RS: N	CAS #														
	E-9	OXYGEN		Components Not Necessary for Pure Chemical				P (M: Mix P: Pure W: Waste)	6,800	6,800	680.00	B (A: Gallons B: Cu Feet C: Pounds D: Tons)	B (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	fire, reactive, Y presure rels., Y acute health, chronic heal., radioactive
Sub-Location	13131 LA ST IRWINDALE CA 91706							G (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* L	Waste Code:	Amt:		
If EPCRA, sign :															
RS: N	CAS #	7782-44-7													
	G-10	TRANSMISSION FLUID		HYDROTREATED PETROLEUM DISTILLATES (HEAVY PARAFFIN	85.0			M (M: Mix P: Pure W: Waste)	55	55	55.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	fire, reactive, presure rels., acute health, chronic heal., radioactive
Sub-Location	13131 LA ST IRWINDALE CA 91706							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* D	Waste Code:	Amt:		
If EPCRA, sign :															
RS: N	CAS #														

* Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

Date: 11/2/2010

Hazardous Materials Inventory Statement

Report #5316
Run By: RMARTINEZ

Business Name: **HANSON STRUCTURAL PRECIAST**
(Same as Facility Name or DBA) 13131 LOS ANGELES ST IRWINDALE

Chemical Location: Unit # 2
(Building/Storage Area)

Facility ID # : FA0016629

1. Haz. Class	2. Grid Coordinate	3. Common Name	Trade Secret	4. Hazardous Components (For mixture only) Chemical Name	% Weight	EHS	CAS #	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
	G10	MOTOR OIL		MOTOR OIL	100.0			M (M: Mix P: Pure W: Waste)	55	55	55.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	Y fire reactive; presure rels.; Y acute health; chronic heal.; radioactive
Sub-Location	13131 LA ST IRWINDALE CA 91706							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* D	Waste Code:	Amt:		
If EPCRA, sign :															
H20052119	RS: N	CAS #													
	G11	MOTOR OIL		Components Not Necessary for Pure Chemical				P (M: Mix P: Pure W: Waste)	55	55	55.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	Y fire reactive; presure rels.; Y acute health; chronic heal.; radioactive
Sub-Location	13131 LA ST,IRWINDALE CA 91706							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* D	Waste Code:	Amt:		
If EPCRA, sign :															
H20052108	RS: N	CAS #		8002-05-9											
	G10	HYDRAULIC OIL		MINERAL OIL	0.0		8012-95-1	M (M: Mix P: Pure W: Waste)	55	55	55.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	fire reactive; presure rels.; acute health; chronic heal.; radioactive
				HYDRAULIC OIL (FLUID)	0.0										
Sub-Location	13131 LA ST,IRWINDALE CA 91706							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* D	Waste Code:	Amt:		
If EPCRA, sign :															
H20052109	RS: N	CAS #													
	G10	MOTOR OIL		Components Not Necessary for Pure Chemical				P (M: Mix P: Pure W: Waste)	55	55	55.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	Y fire reactive; presure rels.; Y acute health; chronic heal.; radioactive
Sub-Location	13131 LA ST,IRWINDALE CA 91706							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* D	Waste Code:	Amt:		
If EPCRA, sign :															
H20052110	RS: N	CAS #		64741-51-1											
	F5	CALCIUM NITRATE		DIETHYLENE GLYCOL	50.0		111-46-6	M (M: Mix P: Pure W: Waste)	1,000	1,000	1,000.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryogenic)	A	Y fire reactive; presure rels.; acute health; Y chronic heal.; radioactive
				CALCIUM NITRATE	20.0		10124-37-5								
Sub-Location	13131 LA ST,IRWINDALE CA 91706							L (L: Liquid S: Solid G: Gas)	Curies: (If radioactive)	Days On Site: 365	Storage Container:* A	Waste Code:	Amt:		
If EPCRA, sign :															
H20052111	RS: N	CAS #													

*

Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

Date: 11/2/2010

Hazardous Materials Inventory Statement

Report #5316
Run By : RMARTINEZ

Business Name: **HANSON STRUCTURAL PRECIAST**
(Same as Facility Name or DBA) 13131 LOS ANGELES ST IRWINDALE

Chemical Location: Unit # 2
(Building/Storage Area)

Facility ID # : FA0016629

1. Haz. Class	2. Grid Coordinate	3. Common Name	Trade Secret	4. Hazardous Components (For mixture only) Chemical Name	% Weight	EHS	CAS #	5. Type and Physical State	6. Quantities Max. Daily	Average Daily	Largest Cont.	7. Units	8. Storage Codes Storage Pressure	Storage Temp.	9. Hazard Categories
	1-10	WASTE OIL		USED OIL	0.0		0	W (M: Mix P: Pure W: Waste)	300	300	300.00	A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryrogenic)	A	Y fire reactive presure rels. acute health Y chronic heal. radioactive
Sub-Location	13131 LA ST,IRWINDALE CA 91706								Curies: (If radioactive)	Days On Site:	Storage Container:*				
If EPCRA, sign :								L (L: Liquid S: Solid G: Gas)		365	D	Waste Code:	Amt:		
H20051714	RS: N	CAS #													
		LIGHOSULFONATES		SODIUM LIGNOSULFONATE			8061-51-6	M (M: Mix P: Pure W: Waste)	1,000	1,000		A (A: Gallons B: Cu Feet C: Pounds D: Tons)	A (A: Ambient B: > Ambient C: < Ambient D: Cryrogenic)	A	fire reactive presure rels. Y acute health chronic heal. radioactive
				DIMETHOXANE			828-00-2								
Sub-Location	ON SITE			SODIUM HYDROXIDE			1310-73-2		Curies: (If radioactive)	Days On Site:	Storage Container:*				
If EPCRA, sign :								L (L: Liquid S: Solid G: Gas)		365	A	Waste Code:	Amt:		
H20062918	RS: N	CAS #													
		NATURAL GAS METHANE						P (M: Mix P: Pure W: Waste)	2,000		210.00	B (A: Gallons B: Cu Feet C: Pounds D: Tons)	B (A: Ambient B: > Ambient C: < Ambient D: Cryrogenic)	B	fire reactive Y presure rels. acute health chronic heal. radioactive
Sub-Location	VEHICLE MAINTENANCE			Components Not Necessary					Curies: (If radioactive)	Days On Site:	Storage Container:*				
If EPCRA, sign :				for Pure Chemical				G (L: Liquid S: Solid G: Gas)		365	L	Waste Code:	Amt:		
H20155092	RS:	CAS #					74-82-8								

* Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type	Code	Storage Type
A	Aboveground Tank	D	Steel Drum	G	Carboy	J	Bag	M	Glass Bottle or Jug	P	Tank Wagon
B	Belowground Tank	E	Plastic/Non-metallic Drum	H	Silo	K	Box	N	Plastic Bottle or Jug	Q	Rail Car
C	Tank Inside Building	F	Can	I	Fiber Drum	L	Cylinder	O	Tote Bin	R	Other

County Fire Department
Facility Information Report

OWNER FILE INFORMATION

** Clearly make changes/corrections here.*

Owner ID: OW0016629 New Owner ID:
Owner Name: HANSON PIPE & PRODUCTS Tax ID : 95-3807-406
Owner DBA: HANSON STRUCTURAL PRECIAST Drvr Liens :
Owner Address: 3500 MAPLE AVE # 1180
DALLAS, TX 75219
Work/Business Phone: 214-525-5500
Billing/Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
ATTN/Care of: DWIGHT EDWARDS
Ownership Type:

FACILITY FILE INFORMATION

Facility ID: FA0016629 Account ID: AR0016630
Facility Name: HANSON STRUCTURAL PRECIAST
No. of Employee: 140
Site Location: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Phone: 626-962-8751
Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Operator/Care of: DWIGHT EDWARDS E-Mail Address:
District: E - EAST
City Code: IRWN **IRWINDALE**
CUPA Jurisdiction: CO
Operating Hours: M-SAT 5AM-7PM
SIC Code: 3272 - Concrete products, nec
Business Type / Code: 01 CORPORATION
Station: 029

GENERAL HEALTH PROGRAM ELEMENTS

Record ID	Current Program Element	Current Status	EPA #	Effective Date Beg.	Effective Date End	Changes: Program Element	Changes: Status
PR0004748	3003 - HM HANDLER, FEE GROUP 03	Active, billable		07/14/97			
PR0028905	1004 - HW GEN, 101-500 EMPLOYEES	Active, billable		01/01/00			
[illegible]	[illegible]	[illegible]		[illegible]			
[illegible]	[illegible]	[illegible]					

Addition Program Element:

CA Waste Code					
RCRA Waste Code					
AMOUNT per quarter					
UNITS (PGTY) Pounds, Gallons, Tons, Yards					

CONSENT GIVEN BY: Dwight Edwards INSPECTOR SIGNATURE: [signature] EMPLOYEE ID: 125
1st DATE & TIME OF INSPECTION: 1-28-10 2nd DATE & TIME OF INSPECTION:
3rd DATE & TIME OF INSPECTION:

Field Notes

LIST ORDER OF INSPECTION AS FOLLOWS: I. OPENING CONFERENCE II. WALK THROUGH III. DOCUMENTS IV. CLOSING CONFERENCE V. VIOLATIONS

On January 28, 2010 a routine hazardous materials & waste inspection was conducted at 13131 Los Angeles St in the City of Irwindale. The operator Dwight Edwards granted consent for the inspection. Facility EPA # is CAL 000221108. Facility main line of work is pre cast cement for building parking structures. Facility manufactures Double T's Beams & columns.

Equipment maintenance is main source of hazardous waste
steam cleaning pit → recycle water through filters → sludge → HW

Rag Service 1 X 55 gallon drum → waste removed by K-Vac
7-17-09 (352) Rags 1000 lbs 003957716JJK

3 Cement Cutters, 4 Forklifts, 7 Cement mixers → oil changes
1 X 200 AST used oil → waste removed by Action
11-10-09 200 gallons (221) used oil 000824459GBF
1-27-10 200 gallons (221) used oil 000823929GBF

2 Rebar benders → hydrolic oil → never been changed
Observed CCP, Training Records, Permit, MSDS

Adding Natural Gas cylinders to inventory & deleting diesel & Gasoline
Advised Mr. Edwards to have Natural Gas cylinders certified due to refilling by his employees.

CONSENT GIVEN BY: INSPECTOR SIGNATURE: EMPLOYEE ID:

1st DATE & TIME OF INSPECTION: 2nd DATE & TIME OF INSPECTION:

3rd DATE & TIME OF INSPECTION:

Los Angeles County Fire Dept • Health Hazardous Materials Division
Certified Unified Program Agency • Participating Agency

REFER REPLY TO:
East District Office
5110 North Peck Road
El Monte, CA 91732
P(626) 450-7450
F(626) 448-0892

INSPECTION REPORT

BUSINESS: Hanson Pipe & Products	OWNER: Hanson Structural Precast	DATE: 1-28-10
ADDRESS: 13131 Los Angeles St Irwindale CA 91706		FA 0016629

The following items, if applicable, have been inspected. This document constitutes a Summary of Violations and Notice to Comply if the violation (V) column is checked. *Reference: Titles 19 and 22 of the California Code of Regulations (CCR), Chapters 6.5, 6.67, and 6.95 of the Health and Safety Code (HSC), and Titles 11 and 12 of the Los Angeles County Code (Co Ord)*

HAZARDOUS WASTE GENERATOR				HAZARDOUS WASTE GENERATOR			
	V	SUBJECT	SECTION		V	SUBJECT	SECTION
1		Hazardous waste determination	CCR 66262.11	24		Manifest copies retained for 3 years	CCR 66262.40(a)
2		Proper disposal of hazardous waste	HSC 25189.5 (a)	25		Consolidated manifest requirements	HSC 25160.2
3		Maintain/operate to prevent release/fire	CCR 66265.31	26		Hazardous waste transported by registered hauler	HSC 25163(a)
4		Hazardous waste labeling	CCR 66262.34(f)	27		LDR documents retained onsite	CCR 66268.7(a)(6)
5		Hazardous waste accumulation time	CCR 66262.34(a-d)	28		Hazardous waste analysis retained for 3 years	CCR 66262.40(c)
6		Hazardous materials storage and labeling	CCR 66261.2(f)	29		Personnel training	CCR 66265.16
7		Satellite accumulation	CCR 66262.34(e)	30		Contingency plan	CCR 66265.51
8		Containers leaking or not in good condition	CCR 66265.171	31		Emergency preparedness/prevention	CCR 66265.30-.37
9		Hazardous waste containers closed	CCR 66265.173(a)	32		Source Reduction requirements for LQGs	CCR 67100.3
10		Separation of incompatibles	CCR 66265.177	33		Biennial Report requirements	CCR 66262.40-.41
11		Retrograde/accumulated speculatively	CCR 66262.10	34		Excluded recyclable material management	HSC 25143.2/.9
12		Empty containers	CCR 66261.7	35		Recyclable Material Report	HSC 25143.10
13		Used oil management	CHSC 25250.4	36		Site assessment requirements	HSC 25187(a)(1)
14		Used oil filter management	CCR 66266.130	37		Closure requirements	CCR 66265.111/114
15		Used battery management	CCR 66266.81	38		Reckless management of hazardous waste	HSC 25189.6
16		Contaminated textile management	HSC 25144.6	39		Other violation(s)	
17		Container inspection - weekly	CCR 66265.174			HAZARDOUS MATERIALS HANDLER	
18		Tank inspection - daily	CCR 66265.195	50		Contingency plan/inventory submitted	HSC 25503.5
19		Tank operating requirements	CCR 66265.194	51		Plan and inventory updated & accurate	HSC 25505
20		EPA ID number[submit DTSC form 1358]	CCR 66262.12	52		Regulated substance registration	HSC 25533(a)
21		Hazardous waste transported with manifest	CCR 66262.20			ABOVEGROUND PETROLEUM STORAGE TANK	
22		Hazardous waste manifest complete	CCR 66262.23(a)	60		SPCC Plan Referral to RWQCB (213) 576-6600	HSC 25270.3
23		Manifest copies to DTSC	CCR 66262.23(a)(4)	70		**PERMIT REQUIRED** Submit UP Forms	Co Ord 12.50.075

☑ **NO SIGNIFICANT VIOLATIONS OBSERVED ON DATE OF INSPECTION.**

☐ **NOTICE TO COMPLY: THE VIOLATION(S) CITED MUST BE CORRECTED BY_____.**

☐ **RETURN CERTIFICATION OF COMPLIANCE FOUND ON BACK OF THIS NOTICE.**

Attention: The items checked are in violation. A reinspection may occur at any time to verify compliance. Non-compliance could result in reinspection fees, permit revocation, and/or administrative/civil/criminal penalties. Any time granted for correction of the violation(s) does not preclude any enforcement action by this Department or other agencies.

It is improper and illegal for any County officer, employee or inspector to solicit bribes, gifts or gratuities in connection with performing their official duties. Improper solicitations include requests for anything of value such as cash, discounts, free services, paid travel or entertainment, or tangible items such as food or beverages. Any attempt by a County employee to solicit bribes, gifts or gratuities for any reason should be reported immediately to either the County manager responsible for supervising the employee or the Fraud Hotline at (800) 544-6861 or www.lacountyfraud.org.
YOU MAY REMAIN ANONYMOUS.

Inspected By:	Consent Given By:	Authorized Representative's Signature:
Milton Molina	Dwight Edwards	Dwight Edwards

LA County Fire Department
Facility Information Report

OWNER FILE INFORMATION

* Clearly make changes/corrections here.

Owner ID: OW0016629 New Owner ID:
Owner Name: HANSON PIPE & PRODUCTS Tax ID : 95-3807-406
Owner DBA: HANSON SPANCRETE PACIFIC INC
Owner Address: 3500 MAPLE AVE # 1180
DALLAS, TX 75219
Work/Business Phone: 214-525-5500
Billing/Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
ATTN/Care of: DWIGHT EDWARDS
Ownership Type:

FACILITY FILE INFORMATION

Facility ID: FA0016629
Facility Name: HANSON SPANCRETE PACIFIC INC
No. of Employee: 140
Site Location: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Phone: 626-962-8751
Mailing Address: 13131 LOS ANGELES ST
IRWINDALE, CA 91706
Operator/Care of: DWIGHT EDWARDS E-Mail Address:
District: E - EAST
City Code: IRWN
CUPA Jurisdiction: CO
Operating Hours: Days: M-SAT Hours: 5AM-7PM
SIC Code: 3272 Concrete products, nec Nature of Business: CONCRETE PRODUCTS
Business Type / Code:
Station: 029
Date First Became Operational:

GENERAL HEALTH PROGRAM ELEMENTS

Record ID	Current Program Element	Current Status	EPA #	Effective Date Beg.	Effective Date End	Changes: Program Element	Changes: Status
PR0004748	3003 - HM HANDLER, FEE GROUP 03	Active, billable		07/14/97			
PR0028905	1004 - HW GEN, 101-500 EMPLOYEES	Active, billable		01/01/00			
PR0050276	7124 - PA, DPW, UST	Active, billable		02/20/90			

Addition Program Element:

CA Waste Code					
RCRA Waste Code					
AMOUNT per quarter					
UNITS (PGTY) Pounds, Gallons, Tons, Yards					

CONSENT GIVEN BY: Floyd Behrendt INSPECTOR SIGNATURE: B. Nassi EMPLOYEE ID: 75
1st DATE & TIME OF INSPECTION: 6/23/04 2nd DATE & TIME OF INSPECTION:
3rd DATE & TIME OF INSPECTION:

ENVIRONMENTAL CONTACT INFORMATION

** For Haz Mat Handlers.

Contact Name: DWIGHT EDWARDS
13131 LOS ANGELES ST
IRWINDALE

Phone : 626-962-8751

Dun & Bradst.: 00-834-7569

EMERGENCY CONTACT INFORMATION

	PRIMARY CONTACT:	SECONDARY CONTACT:
Name :	RICK BRADLEY	DWIGHT EDWARDS
Title :	SUPERVISOR	V/P, PRODUCTION
Business Phone :	626-962-8751	626-962-8751
24 - Hour Phone :	626-331-1903	760-242-2917
Pager # :	Not Specified	Not Specified

PREVIOUS INSPECTIONS

Activity Date	Program Element	Service	Result	Action	Violation Code	Inspector ID
12/06/99	3002	001	01	00	0	EE0000108
12/06/99	1004	001	01	00	0	EE0000108

VIOLATIONS LIST

Activity Date	Program Element	Viol Status	Service	Result	Action	Violation Code	Violation Degree	Description

01-HM HW- Inspection conducted with Floyd Behrendt

Company Produces Concrete

↓

cement
sand
gravel → mixed
↓
cured

equipments { Forklifts
trucks → maintance → waste oil
waste antifreeze

CONSENT GIVEN BY: _____ INSPECTOR SIGNATURE: _____ EMPLOYEE ID: _____

1st DATE & TIME OF INSPECTION: _____ 2nd DATE & TIME OF INSPECTION: _____

3rd DATE & TIME OF INSPECTION: _____

Los Angeles County Fire Dept • Health Hazardous Materials Division
Certified Unified Program Agency • Participating Agency

INSPECTION REPORT

REFER REPLY TO:
East District Office
5110 North Peck Road
El Monte, CA. 91732
(626) 450-7450

BUSINESS: Hanson	OWNER:	DATE: 6/23/04
ADDRESS: 13131 Los Angeles, Irwindale		FA

The following items, if applicable, have been inspected. This document constitutes a Summary of Violations and Notice to Comply if the violation (V) column is checked.

Reference: Titles 19 and 22 of the California Code of Regulations (CCR), Chapters 6.5, 6.67, and 6.95 of the Health and Safety Code (HSC), and Titles 11 and 12 of the Los Angeles County Code (Co Ord)

HAZARDOUS WASTE GENERATOR				HAZARDOUS WASTE GENERATOR			
	V	SUBJECT	SECTION		V	SUBJECT	SECTION
1		Hazardous waste determination	CCR 66262.11	24		Manifest copies retained for 3 years	CCR 66262.40(a)
2		Proper disposal of hazardous waste	HSC 25189.5 (a)	25		Consolidated manifest requirements	HSC 25160.2
3		Maintain/operate to prevent release/fire	CCR 66265.31	26		Hazardous waste transported by registered hauler	HSC 25163(a)
4		Hazardous waste labeling	CCR 66262.34(f)	27		LDR documents retained onsite	CCR 66268.7(a)(6)
5		Hazardous waste accumulation time	CCR 66262.34(a-d)	28		Hazardous waste analysis retained for 3 years	CCR 66262.40(c)
6		Hazardous materials storage and labeling	CCR 66261.2(f)	29		Personnel training	CCR 66265.16
7		Satellite accumulation	CCR 66262.34(e)	30		Contingency plan	CCR 66265.51
8		Containers leaking or not in good condition	CCR 66265.171	31		Emergency preparedness/prevention	CCR 66265.30-.37
9		Hazardous waste containers closed	CCR 66265.173(a)	32		Source Reduction requirements for LQGs	CCR 67100.3
10		Separation of incompatibles	CCR 66265.177	33		Biennial Report requirements	CCR 66262.40-.41
11		Retrograde/accumulated speculatively	CCR 66262.10	34		Excluded recyclable material management	HSC 25143.2/.9
12		Empty containers	CCR 66261.7	35		Recyclable Material Report	HSC 25143.10
13		Used oil management	CHSC 25250.4	36		Site assessment requirements	HSC 25187(a)(1)
14		Used oil filter management	CCR 66266.130	37		Closure requirements	CCR 66265.111/114
15		Used battery management	CCR 66266.81	38		Reckless management of hazardous waste	HSC 25189.6
16		Contaminated textile management	HSC 25144.6	39		Other violation(s)	
17		Container inspection - weekly	CCR 66265.174			HAZARDOUS MATERIALS HANDLER	
18		Tank inspection - daily	CCR 66265.195	50		Contingency plan/inventory submitted	HSC 25503.5
19		Tank operating requirements	CCR 66265.194	51		Plan and inventory updated & accurate	HSC 25505
20		EPA ID number[submit DTSC form 1358]	CCR 66262.12	52		Regulated substance registration	HSC 25533(a)
21		Hazardous waste transported with manifest	CCR 66262.20			ABOVEGROUND PETROLEUM STORAGE TANK	
22		Hazardous waste manifest complete	CCR 66262.23(a)	60		SPCC Plan Referral to RWQCB (213) 576-6600	HSC 25270.3
23		Manifest copies to DTSC	CCR 66262.23(a)(4)	70		PERMIT REQUIRED – Submit UP Forms	Co Ord 12.50.075

☑ ~~NO~~ SIGNIFICANT VIOLATIONS OBSERVED ON DATE OF INSPECTION.

☐ NOTICE TO COMPLY: THE VIOLATION(S) CITED MUST BE CORRECTED BY_____.

☐ RETURN CERTIFICATION OF COMPLIANCE FOUND ON BACK OF THIS NOTICE.

Attention: The items checked are in violation. A reinspection may occur at any time to verify compliance. Non-compliance could result in reinspection fees, permit revocation, and/or administrative/civil/criminal penalties. Any time granted for correction of the violation(s) does not preclude any enforcement action by this Department or other agencies.

Provide all the receipt of Haz waste Pick up
(1) waste oil
(2) waste antifreeze (3) Solvent

Inspected By: B. Nassey	Consent Given By: X Floyd Behrend	Authorized Representative's Signature: X [signature]

County of Los Angeles • Fire Department
Health Hazardous Materials Division

INSPECTION REPORT

Form 2730 Submitted

Changed DBA/Owner 2 mos ago

Business Name: Hanson Spancrete Pacific, Inc.		Phone: 626-962-8751	Facility ID #: HM 014394-02 HW 418957-102
Site Address: 13131 Los Angeles St			Industry Type: Concrete mixing & pre-casting company
City: Irwindale	CA	Zip Code: 91706	Operating hrs:
			EPA #:
Mailing Address: SAA		Business owner: Hanson Spancrete Pacific Inc.	Sic Code: 3272 / No of Empl. 140
City:	State:	Zip Code:	Map Page: / Grid:
Insp Dist:	Insp Unit:	Div:	BN: / Sta:

FEE GROUP		TREATMENT TIERS	OTHER
☒ Disclosure/RS	02	A. ___ PBR	☐ Financial Assurance
☐ RS		B. ___ CA	☐ Phase I
☒ UST	2	C. ___ CEL	☐ Offsite HazWast Consolidation
☐ AST/SPCC		D. ___ CE-CL	☐ Recycling Notification
☒ HazWaste Generator	102	E. ___ CESW	☐ Large Quantity Generator
☐ Tiered Permitting		F. ___ CESQT	☐ Fixed Household HazWaste Collection Facility
		___ Total Units	

CLASS OF VIOLATIONS	I	II	Minor
HM			
HW			
TP			
AST			

CA Waste Code	221	181	134			
RCRA Waste Code						
AMT (PGTY) Pounds, Gallons Yds, Tons: per quarter	300 G	150 P	45 G			

Referrals ☐ AQMD ☐ B & S ☐ FIRE ☐ IW ☐ OSHA ☐ DTSC ☐ _____

Visit Date	Start Time	Insp Type	Pro Elem	Time Invested	Action Code	Special Circumstances
12/06/99	10:30	001	HW	01:00	O	
/ /	:	061	HM	01:00		
/ /	:			:		
/ /	:			:		
/ /	:			:		
			Total Time:	:		

INSPECTION TYPE: C:Complaint I: Inspection J: Joint Inspection Mm: Multimedia R: Revisit P: Permit S: Sampling Cl: Closure
PROGRAM ELEMENT: HM HW TP AST UST RS
ACTION CODES: A: Abate AO: Adm Order CR: Criminal Referral H: Hearing N: NOV O: No viol T: Time ext X: Other Z: non-gen

Insp No 108	Signature	Date 12-06-99
Consent given by: ~~Er~~ Dwight Edwards	Title Vice President / Production	Date

JUN 15 2000

County of Los Angeles • Fire Department
Health Hazardous Materials Division

INSPECTION REPORT

DATE: 12-06-99

DBA: HANSON SPANCRETE PACIFIC, INC.	Facility ID #: HM 014394-02 HW 418957-102
LIST ORDER OF INSPECTION AS FOLLOWS: I. OPENING CONFERENCE II. WALK THROUGH III. DOCUMENTS IV. CLOSING CONFERENCE V. VIOLATIONS	

MET WITH DWIGHT EDWARDS AND OBTAINED HIS CONSENT TO INSPECT AFTER EXPLAINING TO HIM THE NATURE OF THIS INSPECTION.
GENERAL HOUSEKEEPING: FAIR TO THIS KIND OF OPERATION.

THIS IS A CONCRETE MIXING AND PRE-CASTING FACILITY.

ADDITIVES USED IN MIXING CONCRETE:

PL 90 (SODIUM DODECYL BENZENE SULFONATE) 1X 15,000 GAL PLASTIC A/G TANK
POLAR SET (CALCIUM NITRATE + DEG) ONLY OCCASIONALLY IN 55 GAL DR
NRDA 79 (SODIUM O-PHENYL-PHENOL + TRIETHANOLAMINE) 1X 1500 GAL A/G TANK
MBL-82 (TRIETHANOLAMINE) NOT IN USE.
DCI-S (CORROSION INHIBITOR) 1X 15,000 GAL A/G TANK NOT IN USE

GASOLINE IN 1X 2000 UST
DIESEL IN 1X 2000 UST

FRESH CURE OIL IN 6X 55 GAL DRS.
KEROSENE IN 1X 55 GAL DR. FOR HEATING
WASTE OIL IN 1X 200 GAL A/G TANK LABEL ONLY
USED OIL FILTER IN 1X 55 GAL DR.

1X STEAM CLEANING UNIT
WASTE WATER IS REUSED. AFTER FILTERING ~~SLUDGE FROM~~ OIL IN FILTER → USED FILTER (HW) STORAGE.

1X PARTS CLEANER Aqueous or Solvent?

Count of Los Angeles • Fire Departm t
Health Hazardous Materials Division

INSPECTION REPORT

DATE: 12-06-99

DBA: Hanson Spancrete Pacific, Inc.	Facility ID #: HM 014394-02 HW 418957-102

LIST ORDER OF INSPECTION AS FOLLOWS: I. OPENING CONFERENCE II. WALK THROUGH III. DOCUMENTS IV. CLOSING CONFERENCE V. VIOLATIONS

~~Waste Oil in~~

Manifest #	99282371	7-19-99	200 GAL W/OIL By	Abbott's Waste Oil
	99092752	9-28-99	200 GAL "	"
5 mos W/O -	990815	10-14-99	1 Dr Used Oil Filter 1 Dr Spent Absorbent 1 Dr Oil & Rags	Kvac Envir Ser.
	990514	7-09-99	Sludge From Steam Cleaning 400 GAL	" -
	99327708	11-3-99	15 GAL ?	Kwik Kleen 909-469-1490.
	99327740	11-30-99	15 GAL	"

No violation was observed.

Formerly Spancrete of California
Changed DBA/Owner 2 months ago

Los Angeles County • Certified Unified Program Agency
FACILITY INFORMATION

BUSINESS OWNER/OPERATOR IDENTIFICATION

I. IDENTIFICATION

FACILITY ID # HW 418957 HM 019-999-014394	BEGINNING DATE 01/01/00	ENDING DATE 12/31/00
BUSINESS NAME (same as FACILITY NAME or DBA-Doing Business As): HANSON SPANCRETE PACIFIC, INC.		BUSINESS PHONE (626) 962-8751
BUSINESS SITE ADDRESS: 13131 Los Angeles Street		
CITY: Irwindale	UNINCORPORATED ☐ YES ☒ NO	CA / ZIP CODE 91706
DUN & BRADSTREET: 008347569	LOS ANGELES	SIC CODE (4 digit #): 3272
BUSINESS OPERATOR NAME: HANSON SPANCRETE PACIFIC, INC.		BUSINESS OPERATOR PHONE (626) 962-8751

II. BUSINESS OWNER

OWNER NAME (First Name, Last Name): HANSON SPANCRETE PACIFIC, INC.		OWNER PHONE (626) 962-8751	
OWNER MAILING ADDRESS: 13131 Los Angeles Street	CITY: Irwindale	STATE: CA	ZIP CODE: 91706

III. ENVIRONMENTAL CONTACT

CONTACT NAME (First Name, Last Name): DWIGHT EDWARDS		CONTACT PHONE (626) 962-8751	
CONTACT MAILING ADDRESS: 13131 Los Angeles Street	CITY: Irwindale	STATE: CA	ZIP CODE: 91706

IV. EMERGENCY CONTACTS

PRIMARY	SECONDARY
NAME (First Name, Last Name): RICK BRADLEY	NAME (First Name, Last Name): DWIGHT EDWARDS
TITLE: Supervisor	TITLE: Vice President, Production
BUSINESS PHONE: (626) 962-8751	BUSINESS PHONE: (626) 962-8751
24-HOUR PHONE: (626) 331-1903	24-HOUR PHONE: (760) 242-2917
PAGER #	PAGER #

V. MAILING/BILLING INFORMATION

ADDRESS: 13131 Los Angeles Street			
CITY: Irwindale	STATE: CA	ZIP CODE: 91706	ATTN: Dwight Edwards

ADDITIONAL LOCALLY COLLECTED INFORMATION

NUMBER OF EMPLOYEES: approx. 100 — 140

VI. CERTIFICATION

Certification: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this inventory and believe the information is true, accurate, and complete.

Dwight Edwards (135) — NAME OF DOCUMENT PREPARER	Edward A. Wopschall (136) — NAME OF SIGNER	President (137) — TITLE OF SIGNER
95-3807406 (133 c) — TAX ID # or SOCIAL SECURITY #	SIGNATURE OF OWNER/OPERATOR or DESIGNATED REPRESENTATIVE	11/23/99 (134) — DATE

OFFICIAL USE ONLY	CPP	HW 102	HM 02	ARP	AST	UST 2	TP	CUPA	PA
INSPECTOR 108	DISTRICT EAST	DATE OF INSP. 12-06-99	DIV	BN	STA				

Sent By: Spancrete of California; 626 337 9972; Dec-6-99 14:39; Page 2/2

1/3/95

PHL# 918957 **INDUSTRY SURVEY** Los Angeles County Fire Department • Prevention Bureau Health Hazardous Materials Division LACoFD HHMD • IS1 v3.2 • 4/93

4-6-94

Code 101 SIC# 3270 EPA# CAL000033199 ☐Pending ☐NA

DBA SPANCRETE	Phone 213-686-0596
Owner SPANCRETE OF CALIF INC	Interviewed DWIGHT EDWARDS
Partner	Title V.P. PRODUCTION
Address 13131 Los Angeles St (number, dir, street name, type)	Product/Service CONTRACTOR
unit # City IRW Zip 91706	
Mailing 13131 Los Angeles St IRWINDALE	Start Date 1980 # of employees 47
	# of shifts Operating hours 6-3

Viol Rank 2	CA Waste Code	1 221	2 213	3	4
☐ HWUT	Amt (PGT) Pounds, Gallons, Tons; per quarter	150G	20G		
☐ HRF	Mtl/Qty				

Referrals ☐ AQMD ☐ B&S ☐ Fire ☐ IW ☐ OSHA ☐ SDHS ☐ _____

Viol 01 (02) 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 99

Visit Date	Start Time	Insp	Action	Time Invested	Special Circumstances
02/15/94	15:00	059	IN	1:00	
04/01/94	14:20	089	R, A	0:40	
/ /	:			:	
/ /	:			:	

Signature(s) Harvey Pine

Action codes: A-Abate C-Complaint E-Enforce H-Hearing I-Insp M-site Mit N-NOV O-no viol P-PHL Inv R-Revisit S-Samples T-Time ext X-other Z-non-gen

CONTRACTOR + CONTRACTOR SUPPLIES
CONCRETE BRICKS

WASTE IS GENERATED BY EQUIPMENT MAINTENANCE. PARTS WASHER GENERATES WASTE SOLVENT → Safety Kleen 93119322

Change oil on trucks generates waste oil → KCB OIL Refinery 170 gal/mt 93250209 93250765
Stored in above ground tank

Steam clean equipment
Waste to ground to soak in and evaporate !! N.O.V

Notice of Violation and Order to Comply

COUNTY OF LOS ANGELES • FIRE DEPARTMENT
Health Hazardous Materials Division

Owner SPANCRETE OF CALIF INC	Date FEB-15-1994
Business SPANCRETE	Refer Reply To: Harry Pate HEALTH HAZARDOUS MATERIALS DIVISION 5110 N Peck Rd El Monte CA 91732 Office (818) 450-7450 Fax (818) 448-0892
Address 13131 Los Angeles St	
City, ZIP Code IRWINDALE CA 91706	

Violations: The conditions or practices checked below represent a violation of the referenced section of Title 22, California Code of Regulations (22 CCR, Div 4.5, Ch 10, Sec 66260.1 et seq), and/or Health & Safety Code Chapter 6.5 (H&S, Div 20, Ch 6.5, Sec 25100 et seq) for which there are civil and criminal penalties. Time granted for correction of violations does not preclude any enforcement action by this Department or other agencies. **You are directed to correct the violations within the times specified. Failure to do so will be considered an additional violation.**

HAZARDOUS WASTE DETERMINATION

Correction Date / /

01 ☐ Provide a hazardous waste determination for (CCR 66262.11)

DISPOSAL

Correction Date 03/15/94

Discontinue the illegal disposal of hazardous waste and/or extremely hazardous waste to an unauthorized location (H&S 25189.5):

02 ☒ trash/dumpster/ground;
03 ☐ storm drain;
04 ☐ sewer/septic system with a permit;
05 ☐ unpermitted facility.
06 ☐ Discontinue the disposal of hazardous materials containers which are not legally empty (CCR 66261.7)

WASTE FROM STEAM CLEANER

EPA NUMBER/PERMITS

Correction Date / /

Obtain the following from the Cal-EPA:

07 ☐ EPA Identification Number (contact Cal-EPA, 916-324-1781, for ID number) (CCR 66262.12);
08 ☐ on-site waste treatment/disposal permit for (CCR 66270.1)

09 ☐ extremely hazardous waste permit for handling and disposal of (CCR 67430.1)

STORAGE AND MANAGEMENT OF CONTAINERS

Correction Date / /

Discontinue the on-site accumulation of hazardous waste:

10 ☐ longer than 90 days without an extension from DTSC (CCR 66262.34(c));
11 ☐ longer than 90 days after 100 kg has been accumulated (CCR 66262.34(b));
12 ☐ longer than 1 year or 90 days after 55 gallons has been accumulated at satellite storage.

Label the waste container with the following:

22 ☐ the words, "HAZARDOUS WASTE" (CCR 66262.34(f));
14 ☐ description of contents / hazardous property of waste / generator name and address (CCR 66262.34(f));
13 ☐ accumulation start date (CCR 66262.34(f)).

Provide hazardous waste containers which are:

15 ☐ in good condition (CCR 66265.171);
16 ☐ compatible with waste contents (CCR 66265.172);
17 ☐ closed/sealed during storage (CCR 66265.173);
18 ☐ handled/stored/segregated to minimize waste release/reaction (CCR 66265.177(c));
19 ☐ inspected at least weekly (CCR 66265.174).
25 ☐ Label hazardous materials properly within 10 days or handle as hazardous waste (CCR 66261.2(f)(1)).
26 ☐ Store hazardous materials properly within 96 hours or handle as hazardous waste (CCR 66261.2(f)(2)).
20 ☐ Properly manage used oil filters (CCR 66266.130).
21 ☐ Properly manage spent lead-acid storage batteries (CCR 66266.81).

TANK REGULATIONS

Correction Date / /

23 ☐ Discontinue storing incompatibles in the same tank (CCR 66265.199).
24 ☐ Inspect tank and tank equipment daily and document in the operating record of the facility (CCR 66265.195).

Authorized rep [signature]	Title V.P. R.D.	Page 1 of
Auth rep signature	Inspected by [signature]	LACoFD HHMD • NV1-ELM • v2.6 • 6/93

E 07969

WHITE - OWNER CANARY - DISTRICT PINK - PROSECUTING UNIT

DBA/Name SPAN CRETE of California | Owner SPANCRETE of CALIF. INC.

27 ☐ Obtain a storage permit for tanks greater than 5,000 gallons of hazardous waste (CCR 66262.34(d)).
28 ☐ Provide proper secondary containment for hazardous waste tank systems (CCR 66265.193).
29 ☐ Provide a written assessment for tank system (CCR 66262.192).

RECORDKEEPING
Correction Date ___/___/___

30 ☐ Keep waste analysis/test records for at least three years (CCR 66262.40(c)).
31 ☐ Send Biennial Report to DTSC (CCR 66262.41).
32 ☐ Retain copies of biennial and exception reports for at least three years (CCR 66262.40(b)).

TRAINING
Correction Date ___/___/___

33 ☐ Provide a training program (CCR 66265.16).
34 ☐ Train and supervise personnel within six months of hire date and retrain as needed (CCR 66265.16(b)).
36 ☐ Keep training records on site (CCR 66265.16(d)).
37 ☐ Maintain training records until closure of facility or for at least three years (for former employees) (CCR 66265.16(e)).

CONTINGENCY PLAN/BUSINESS PLAN
Correction Date ___/___/___

38 ☐ Submit a contingency/business plan (CCR 66265.53(b)).
39 ☐ Complete contingency/business plan (CCR 66265.52).
40 ☐ Maintain copy of plan on site (CCR 66265.53).
41 ☐ Amend and update plan as necessary (CCR 66265.54).
42 ☐ Assign Emergency Coordinator to facility (CCR 66265.55).

PREPAREDNESS AND PREVENTION
Correction Date ___/___/___

43 ☐ Maintain facility to minimize possibility of fire or release of hazardous waste or constituents (CCR 66265.31).
44 ☐ Provide an internal communications or alarm system (CCR 66265.32(a)).
45 ☐ Provide a device capable of calling outside emergency help (CCR 66265.32).
46 ☐ Provide access to communication/alarm system during waste handling (CCR 66265.34).
47 ☐ Provide fire/spill control or decontamination system (CCR 66265.32(c)).
48 ☐ Test and maintain emergency equipment (CCR 66265.33).
49 ☐ Maintain required aisle space (CCR 66265.35).

MANIFEST/RECEIPTS
Correction Date ___/___/___

50 ☐ Discontinue shipping hazardous waste without a manifest (CCR 66262.42).
57 ☐ Maintain manifest copy for three years from shipment (CCR 66262.40).
51 ☐ Maintain completed modified manifest/receipt(s) on site for at least three years (CCR 66263.42).
52 ☐ Maintain used oil manifest/receipt(s) on site for at least three years (H&S 25250.8).
53 ☐ Provide manifest copies to DTSC within 30 days (CCR 66262.23).
54 ☐ Complete all applicable sections of the manifest (CCR 66262.23).
55 ☐ Determine status of waste when TSD facility manifest copy is not received within 30 days (CCR 66262.42).
56 ☐ Send Exception Report to DTSC within 45 days (CCR 66262.42).
58 ☐ Provide proper documentation for excluded recyclable materials (H&S 25143.10).

TRANSPORT
Correction Date ___/___/___

59 ☐ Discontinue shipping hazardous waste by transporters lacking an EPA ID No. (CCR 66262.12).
60 ☐ Discontinue shipping hazardous waste to TSD facilities lacking an EPA ID No. (CCR 66262.12).

OTHER
Correction Date 03/15/94

61 ☐ Provide Hazardous Waste Management Performance Plan and Report for review (H&S 25244.21).
62 ☐ Provide a copy of LDR notice/certification for each shipment of restricted hazardous waste (CCR 66268.7).
63 ☐ Provide a corrective action plan for unauthorized releases of hazardous waste or constituents (H&S 25187).
64 ☐ Legally remove hazardous waste/contamination before the closure of the facility (CCR 66265.11).

PROVIDE A SYSTEM FOR THE LEGAL DISPOSAL FOR WASTE FROM THE SPANCRETE CLEANING

Authorized rep | Title | Page 2 of

Auth rep signature | Inspected by

R 0971157 Mr. Annan's D-L-X

County of Los Angeles
Hazardous Waste Program
2615 S. Grand Ave.
Los Angeles, CA 90007
(213) 744-3223

Date of Inspection: 4/22/83
SIC: 3270

SURVEILLANCE AND COMPLIANCE REPORT
HAZARDOUS WASTE GENERATOR

Industrial Waste Permit # none Los Angeles County PHL # 426457

EPA I.D. # /////////////// none ISD/ Yes NO ✓

Generator Name/Address	Mailing Address	Ownership
Concrete of California	1960 Old Canyon Rd.	Dwight W. Annan
13131 Los Angeles Str.	Hacienda Heights 91745	President
IRWINDALE, Cal 91706	(213) 330-6933	

County Los Angeles Type of business: Pre-stessed and cast concrete products Persons present: Lon W. Smith, Manager Technical Services

Contact Person Lon W. Smith

Phone # (213) 962-8751

Samples taken: Yes ___ (receipt attached) No ✓ Average Waste Volume (monthly) = 25 g/mo

Plan of Correction necessary: Yes ✓ (Due date: May 12, 1983) No ___

Discussion with Management:

Official Notice of Violations and Health License application issued. See comments.

On this date an inspection of your facility was conducted under authority of Section 25185, California Health & Safety Code and Section 66328, California Administrative Code. The collection of samples or other evidence, including the taking of photographs, was done under authority of Section 66328, California Administrative Code. The following conditions or practices observed this date are alleged to be violations of one or more sections of the California Health & Safety Code, Division 20, or California Administrative Code, Title 22, relating to the storage, handling, transportation, and disposal of hazardous and extremely hazardous waste or asbestos containing products.

Authorized Representative of Firm*
Name Lon W. Smith, Manager
Title Technical Services
Signature Lon W. Smith
Date 4/22/83

Authorized County Agent
Name Evan Evanoff I.H.
Signature [illegible]
Date 4/22/83

* ... of copy of this form

CONTINUATION SHEET

Section #		Explanation

GENERATOR COMPLIANCE CHECKLIST

Section #		Compliance Yes	No	N/A
	MANIFEST			
66470 (a)	All applicable sections accurately and legibly completed		X	
(CAC) (b)	All hazardous waste transported offsite is recorded		X	
66475 (a)	Producer of waste section is completed and signed		X	
(b)	Hazardous wastes accurately described		X	
(c)	Degree of hazard indicated		X	
(d)	Proper D.O.T. shipping name is provided for each load		X	
(e)	Copy of manifest submitted to registered hauler upon transfer		X	
(f)	Volume of waste properly indicated		X	
(g)	Properly completed copies of manifest submitted monthly to DOHS		X	
	LAND DISPOSAL			
66490 (a)	Only at state approved facilities		X	
	INCOMPATIBLE WASTE			
66500 (a)	Contact/mixing of incompatible waste does not occur	X		
(b)	Storage and transportation containers separated and protected	X		
(c)	Wastes are not added to unwashed incompatible container	X		
	OPERATION REQUIREMENTS FOR PRODUCER			
66505(a,b)	Hazardous determination made for all waste		X	
(c)	Hazardous waste taken to state approved facility		X	
	EXTREMELY HAZARDOUS WASTE PERMIT REQUIREMENTS			
66570(a,b)	No extremely hazardous waste is handled or disposed w/o permit	X		
(d)	No deviation from DOHS approved handling and disposal methods	X		
	HAZARDOUS WASTE FACILITY REQUIREMENTS			
25123.3	Does not store onsite hazardous waste for more than 90 days	X		
(H&Scode)	Does not store hazardous waste offsite for more than 96 hours	X		
25201	Does not operate onsite hazardous waste treatment facility	X		
	Does not operate onsite hazardous waste transfer station	X		
	Does not operate onsite haz. wst. resource recovery facility	X		
	Does not operate onsite hazardous waste disposal site	X		
	UNDERGROUND TANKS			
	Does generator have underground tanks containing:			
	Hazardous materials?	X		
	Hazardous wastes?			
	Does generator have leak detection system for undergrnd tanks?		X	

INFORMATION ONLY

Number of underground storage tanks? 2

Is there a sewer connection on premises? Yes _____ NO X only toil waste

Is there acess to storm drain inlet on premises? Yes X NO _____

Is there a private liquid disposal system on premises? Yes _____ NO X

* - Expl - explanation attached

PLANT SURVEY

DESCRIPTION OF OPERATIONS/PRODUCTS

Pre-cast and stressed ~~Con~~ Concrete Products.

RAW MATERIALS	PROCESS	WASTE CHEMICAL TYPE	WASTE VOL. LBS. OR GAL.	WASTE DISPOSAL METHOD
Gasoline	Fuel Trucks			
Diesel	Fuel Forklifts	11 Trucks	none	—
Gasoline	Fuel-Trucks	4 Fork lifts	none	—
Concrete bond breaker	Prevents Concrete bearing to Forms	Marb-A-Like ~~Mobilite~~ form release	none	—
~~Oils~~		Vinyl base and petroleum naphtha		
~~Greases~~ Oils	Crank Case drain			
Solvents	Degreasing	Stoddard Solvent	55g/2 weeks	Supplier pick up waste
Carburator cleaner	Same			~~Hand Clean~~ ~~Safety Clean~~
Caustic detergent for steam cleaning.	Steam Cleaning	High P.H	none detected	—
Hydraulic Oil	machinery	oils, glycols, rust inhibitors	55g/2 mo	on ground

ACTION:

REFERRAL:

COMMENTS:

Batch plant conveys aggregate to mixers to Combine with cement.

Spillage from hydraulic fluid tanks was observed on the ground covering a 40 ~~#~~ area. Official Notice of violation was issued to contain waste on premises lawfully until removed by lawful recycler or H.W. hauler with record of how much hauled, who did the hauling, when hauled and where taken.

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

"To Enrich Lives Through Effective and Caring Service"

900 SOUTH FREMONT AVENUE
ALHAMBRA, CALIFORNIA 91803-1331
Telephone: (626) 458-5100
http://dpw.lacounty.gov

ALD L. WOLFE, Director

ADDRESS ALL CORRESPONDENCE TO:
P.O. BOX 1460
ALHAMBRA, CALIFORNIA 91802-1460

IN REPLY PLEASE REFER TO FILE: EP-1
009315-039989

March 1, 2007

Mr. Dwight Edwards
Hanson Spancrete Pacific, Inc.
13131 Los Angeles Street
Irwindale, CA 91706-2242

Dear Mr. Edwards:

HAZARDOUS MATERIALS UNDERGROUND STORAGE
CLOSURE CERTIFICATION
CLOSURE APPLICATION NO. 397470
FACILITY LOCATED AT 13131 EAST LOS ANGELES STREET, IRWINDALE (3S)

This office has reviewed the final closure report dated February 25, 2004, required as a part of the subject closure permit. Based on the information submitted, we find that all closure requirements have been completed. With the provision that the information provided to this agency was accurate and representative of existing conditions, it is our position that no further action is required at this time.

Please be advised that this letter does not relieve you of any liability under the California Health and Safety Code or Water Code for past, present, or future operations at this facility. Nor does it relieve you of the responsibility to cleanup existing, additional, or previously unidentified conditions at the facility, which cause or threaten to cause pollution or nuisance or otherwise pose a threat to water quality or public health.

Additionally, be advised that changes in the present or proposed use of the site may require further site characterization and mitigation activity. It is the property owner's responsibility to notify this agency of any changes in report content, future contamination findings, or site usage.

If you have any questions, please contact Mr. John Awujo of this office at (626) 458-3507, Monday through Thursday, 7 a.m. to 5:30 p.m.

Very truly yours,

DONALD L. WOLFE
Director of Public Works

for

TIM SMITH
Senior Civil Engineer
Environmental Programs Division

JA:my
P:\sec\Edwards C513109

cc: Advanced Geo-Environmental (Robert Loeffler)
California Regional Water Quality Control Board, Los Angeles Region (Yue Rong)

COUNTY OF LOS ANGELES

DEPARTMENT OF PUBLIC WORKS

1540 ALCAZAR STREET
LOS ANGELES, CALIFORNIA 90033
Telephone: (213) 226-8111

THOMAS A. TIDEMANSON, Director
WYNN L. SMITH, Chief Deputy Director
CECIL E. BUGH, Assistant Director

ADDRESS ALL CORRESPONDENCE TO
P.O. BOX 4089
LOS ANGELES, CALIFORNIA 90051

IN REPLY PLEASE REFER TO FILE I-9116-3S

December 15, 1986

Spancrete
13131 Los Angeles Street
Irwindale, CA

Attn:

Gentlemen:

HAZARDOUS MATERIALS UNDERGROUND STORAGE
CLOSURE PERMIT NO. 2147B
FACILITY AT: 13131 Los Angeles St.

This office has reviewed the soil/groundwater assessment report submitted on December 12, 1986 as required as part of the subject closure procedure. Based on the information submitted, the following action is required:

[x] The closure is final and no further action is required.

[ ] The soils removed during the tank excavation are unrestricted and may be used as backfill material. The closure is final and no further action is required.

[ ] The soils are not suitable as fill material and must be manifested and transported to a hazardous waste disposal facility as required by California Health and Safety Code, Division 20, Chapter 6.2, unless evidence is presented indicating that disposal is proper at a less restricted facility. Copies of all completed manifests shall be submitted to this office indicating legal disposal.

[ ] The permanent closure of the tanks(s) in place shall comply with requirements set by the local Fire Department. Verification must be submitted to this office indicating proper closure and completion of all work.

If you have any questions concerning this matter, please contact Kelsey Schwartz at (213) 226- 4430.

Very truly yours,

T. A. TIDEMANSON
Director of Public Works

By Kelsey Schwartz
Waste Management Division

cc: L. Blain Co.

CL204 8/86

STATE OF CALIFORNIA—ENVIRONMENTAL PROTECTION AGENCY

PETE WILSON, *Governor*

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 CENTRE PLAZA DRIVE
MONTEREY PARK, CA 91754-2156
(213) 266-7500
FAX: (213) 266-7600

April 1, 1993

Mr. Dwight W. Edwards
United Spancrete Products
13131 Los Angeles Street
Irwindale, CA 91706

SITE INSPECTION - WELL INVESTIGATION PROGRAM (File No. 108.1712)

On March 23, 1993, your facility was inspected by staff of this Regional Board. The inspection mainly focused on present and past methods for handling chemicals and wastes at the facility.

Based on the information presented and staff's observation, no further action on your part is required at this time with respect to the Well Investigation Program. You are required to notify this Board of any change in your operation, including the storage and handling of chemicals, or the processing and disposal of wastes. It should be noted that this letter in no way releases you from any chemical and/or waste handling requirements of this or any other agency.

Per your request, enclosed is a copy of "Waste Discharge Permit Application Package and Instructions." This will show you how to apply a permit in order to legally infiltrate the collected rinse water and surface runoff through the percolation pond into the groundwater. If you have any questions regarding this issue, please call Frank Goldman at (213) 266-7584.

Please contact Wayne V. Chiou at (213) 266-7662 if you have any other questions.

Hank H. Yacoub

Hank H. Yacoub
Supervising Water Resource
Control Engineer

cc: Mr. Wayne Praskins, U.S. EPA - Region IX
Mr. Frank Goldman, RWQCB - Region IV

Enclosures

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
101 Centre Plaza Drive
Monterey Park, CA 91754-2156

June 28, 1996

UNITED SPANCRETE PRODUCTS
13131 LOS ANGELES ST.
IRWINDALE, CA 91706-
File Number: 108.1712

RE: San Gabriel Valley Superfund Areas
U.S. EPA and LARWQCB Notification of No Further Action

For property located at:

UNITED SPANCRETE PRODUCTS
13131 LOS ANGELES ST.
IRWINDALE, CA 91706-
File Number 108.1712

Dear Owner/Operator,

The California Regional Water Quality Control Board, Los Angeles Region ("Regional Board") staff has conducted an assessment of your facility to determine the extent of solvent usage and to assess past and current chemical handling, storage and disposal practices. Your company is among those in the San Gabriel Valley which have received the Regional Board's "No Further Action" letters based on one or more of the following categories: 1) information provided in your pre-inspection questionnaire disclosed little or no solvent use; 2) the results of a staff inspection disclosed no solvent use; or 3) completed assessment work indicated no solvent contamination in the soil.

The purpose of this letter is to inform you that, based on the information provided to U.S. EPA by the Regional Board to date, you will not be asked by the U.S. EPA or the Regional Board to participate in regional groundwater cleanup projects currently planned for San Gabriel Valley. Your company is no longer part of the U.S. EPA Superfund process, and the Regional Board and the U.S. EPA plan no further action concerning your facility.

You may be contacted by those potentially responsible parties ("PRPs") that have been asked to participate in the groundwater cleanup efforts. In the event you are contacted by PRPs, please feel free to contact the appropriate Regional Board or U.S. EPA staff for additional information or assistance. The telephone numbers of Regional Board and U.S. EPA staff are provided on the enclosed contact list.

Sincerely,

Keith A. Takata

Robert P. Ghirelli

Keith A. Takata
Director
Superfund Division
U.S. EPA, Region 9

Robert P. Ghirelli, D. Env.
Executive Officer
California Regional Water Quality
Control Board, Los Angeles Office

enclosure

Los Angeles County Fire Department - Health Hazardous Materials Division
Certified Unified Program Agency - Participating Agency
East District Office
5200 Irwindale Avenue, Suite 205
Irwindale, CA 91706
Telephone: (626) 430-3260 / Fax: (626) 337-0735
www.fire.lacounty.gov/hhmd

Business:	**FA #:**	**Date:**
CLARK PACIFIC IRWINDALE	FA0016629	08/22/2016

OUT = Out of Compliance COS = Corrected on Site RPT = Repeat Violation

VIOLATIONS LIST

Open	Activity Date	Program Element	Viol Status	Service	Result	Action	Violation Degree	Comply on Date	Description
	08/22/2016	1004	OU	001	02	01	Minor	08/22/2016	Generator properly labeled all containers or tanks containing hazardous waste as required
	08/22/2016	1004	OU	001	02	01	Minor	08/22/2016	Generator maintains and operates the facility to minimize the possibility of fire/explosion/release
	08/22/2016	3003	OU	001	02	01	Minor	09/02/2016	Adequate completion and electronic submission of annotated Site Map with all required content
	08/22/2016	3003	OU	001	02	01	Minor	09/02/2016	Adequate completion and electronic submission of Emergency Response Plan and procedures

LOG SHEET

9-29-2016: Comandante
Reviewed file; follow up required

10-27-2016: Comandante
Reviewed file; no further action required

INSPECTOR FIELD NOTES

Inspection Notes
PZ. Paolo Zenarosa
Date: 8/22/16

I. OPENING CONFERENCE

Nature of business: CLARK PACIFIC. The facility is a concrete products company that specializes in cement module molding. The facility has numerous large molds for cement to pour and serve as mass production of cement modules for large construction projects. The walkthrough was conducted by Ernie Figueroa after Ken Jarman provided consent for the inspection.

Consent to conduct the inspection was granted by: Ken Jarman, Plant Manager.

Additional individuals involved in the inspection (if applicable): Ernie Figueroa, Maintenance Lead Staff

Program Element(s): The facility was verified to be a:
Hazardous Waste Generator with 140 employees corresponding to PE 1004;
Hazardous Materials Handler with volume thresholds corresponding to PE 3003.

II. WALKTHROUGH

Process(es):

HazMat Observed On Site:

MONTROSE ENVIRONMENTAL

Travis Knight <travisknight@montrose-env.com>

RE: Public Records Request / Tracking 2018070205

1 message

WB-RB4-PublicRecords <RB4-PublicRecords.RB4-PublicRecords@waterboards.ca.gov> Thu, Jul 12, 2018 at 1:06 PM
To: Travis Knight <travisknight@montrose-env.com>
Cc: WB-RB4-PublicRecords <RB4-PublicRecords.RB4-PublicRecords@waterboards.ca.gov>, "Flores, Lucinda@Waterboards" <Lucinda.Flores@waterboards.ca.gov>

****Please submit future file review requests to the LARWQCB via e-mail to RB4-publicrecords@waterboards.ca.gov****

Thank you for your request to review Regional Board records on:

- 13131 Los Angeles Street, Irwindale, CA 91706

Records found for 13131 Los Angeles Street, Irwindale.

There are documents after April, 2016 for WDID# 4 19I024305 (13131 Los Angeles Street Irwindale CA 91706, Terminated). You may find these documents in our database system, SMARTS:

Stormwater Compliance Unit is implementing a paperless office system to reduce paper use.

The file could be downloaded from the SMARTS system. Accessing documents via SMARTS:

1. Navigate to: https://smarts.waterboards.ca.gov/
2. Click on “View SW Data” under Public Access
3. Click on “Search for Owners/Operators or Facilities/Sites”
4. Enter information provided (WDID Number) and click “Search”.
5. From the search results menu, “NOI Form”, “View Attachments” and “Receipt Letter” accesses documents on record.

The Regional Board has determined that it has documents that are responsive to your request and disclosable.

To ensure that the records you wish to examine are available in the Regional Board’s File Review Room and that you have sufficient desk space to review them, please call Ms. Cindy Flores at 213.576.6633 to request files and schedule an appointment. The File Review Room is found on the second floor of the Regional Board’s Office, located at 320 West Fourth Street in Los Angeles, California.

You may make a copy of any document provided by utilizing one of the self-serve photocopying machines in the File Review Room. For your convenience, the Regional Board provides coin-operated copiers for public use. Copies can be made at a cost of $0.15 per

page. Please be advised, however, that the Regional Board cannot make any change. Therefore, please bring plenty of coins and small bills if you intend on using the copy machines. Alternatively, you can bring a photocopying machine or arrange to have a bonded photocopying service come to the Regional Board and make the desired copies. In that the items being provided are official records, the Regional Board requests that appropriate care be taken when reviewing documents and making copies.

File code search: SW / REM

Clarita Quidilla

Los Angeles Region

From: Travis Knight [mailto:travisknight@montrose-env.com]
Sent: Monday, July 02, 2018 10:01 AM
To: WB-RB4-PublicRecords <RB4-PublicRecords.RB4-PublicRecords@waterboards.ca.gov>
Subject: Public Records Request

Hello,

Do you have any records for the property at 13131 Los Angeles St in Irwindale, CA?

We have already acquired public records on this property in April, 2016, so all we would need is any new information of the property since then.

Thank you

--

Travis Knight

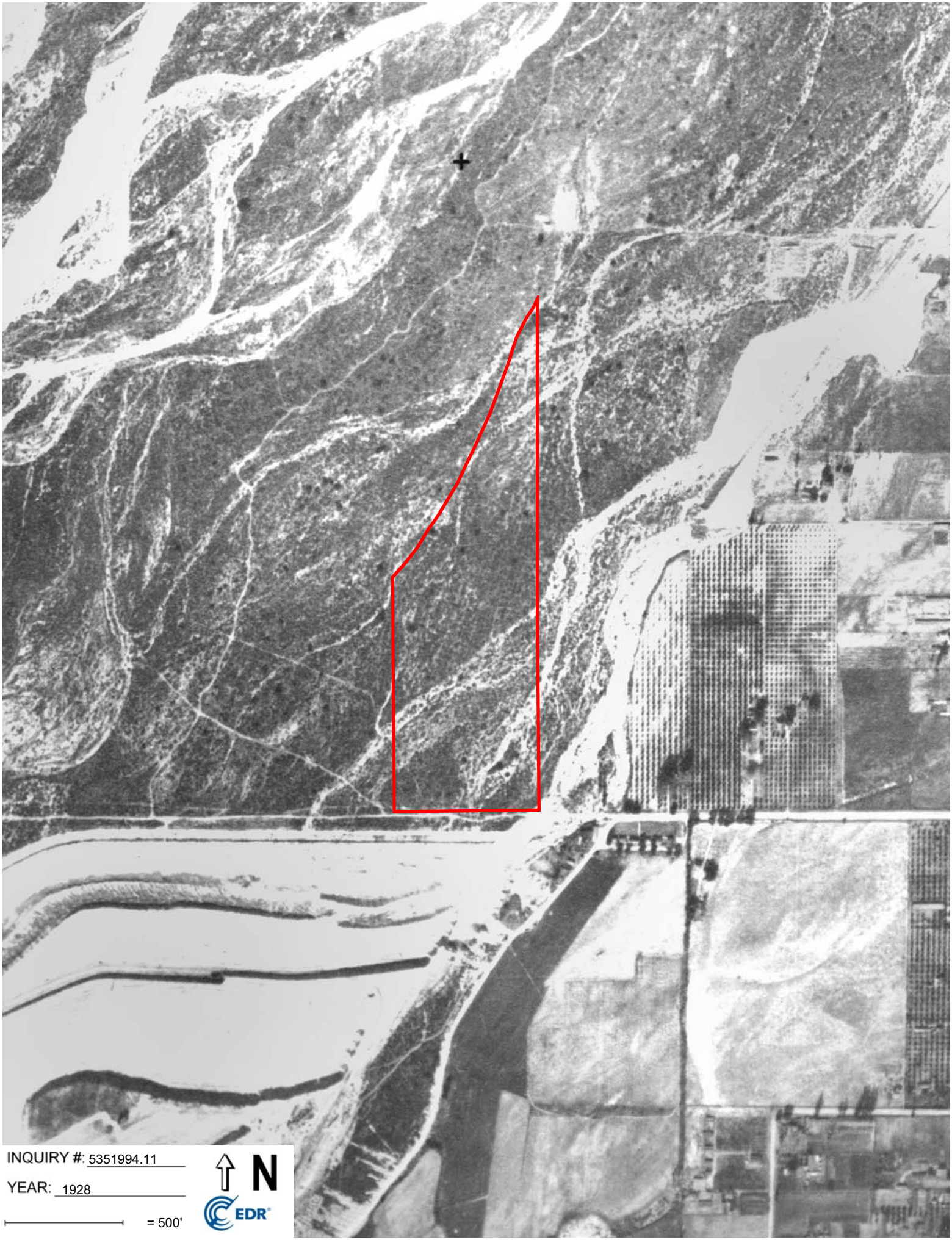
Staff Engineer

Montrose Environmental

CONFIDENTIALITY NOTICE: The contents of this email message and any attachments are intended solely for the addressee(s) and may contain confidential, proprietary and/or privileged information and may be legally protected from disclosure. If you are not the intended recipient of this message or their agent, or if this message has been addressed to you in error, please immediately alert the sender by reply email and then delete this message and any attachments and the reply from your system. If you are not the intended recipient, you are hereby notified that any disclosure, use, dissemination, copying, or storage of this message or its attachments is strictly prohibited.

APPENDIX G

AERIAL PHOTOGRAPHS


INQUIRY #: 5351994.11
YEAR: 1928
= 500'
N
EDR

INQUIRY #: 5351994.11
YEAR: 1948
= 500'
N
EDR

INQUIRY #: 5351994.11
YEAR: 1964
= 500'
N
EDR

INQUIRY #: 5351994.11
YEAR: 1970
= 500'
N
EDR

INQUIRY #: 5351994.11
YEAR: 1981
= 500'
N
EDR

INQUIRY #: 5351994.11
YEAR: 1990
= 500'
N
EDR

INQUIRY #: 5351994.11
YEAR: 2002
= 500'
N
EDR

INQUIRY #: 5351994.11
YEAR: 2016
= 500'
N
EDR

APPENDIX H

SITE PHOTOGRAPHS

Office Exterior

Parking Lot

Office Interior

Former Concrete Fabrication Area

Remaining Concrete Fabrication Structures

Remaining Concrete Fabrication Structures

Quality Control Interior

Maintenance Shop Interior

Maintenance Shop Interior

Concrete Staining Outside Maintenance Shop

Welding Area Interior

Former Equipment Washing Area

Grated Trench with Remaining Liquid

Pad-mounted Transformer in Welding Area

Former Hazardous Waste Storage

Former Hazardous Waste Storage

APPENDIX I

SPECIAL CONTRACTURAL CONDITIONS BETWEEN USER AND ENVIRONMENTAL PROFESSIONAL

LEYMASTER ENVIRONMENTAL CONSULTING, LLC

5500 East Atherton Street, Suite 210
Long Beach, California 90815
Phone (562) 799- 9866
Fax (562) 799-1963

The following is the scope of work involved with a Phase I Environmental Assessment following ASTM E 1527-13 practices:

1. Prepare a history of the subject site development and land use based on data collected from local agency records, aerial photos, on-site inspection and individuals as appropriate.

2. Review pertinent records of local Building, Fire, Environmental and other departments that may have information regarding, or an official interest in, the site or its improvements.

3. Investigate the site and nearby properties with regard to information included in the EPA National Priorities List and CERCLIS List, the Department of Toxic Substances Control State Superfund List and CALSITES List, and listings of sites of environmental concern maintained by other regulatory agencies.

4. Review applicable records and files of the Department of Toxic Substances Control, Regional Water Quality Control Board, Integrated Waste Management Board, and other regulatory agencies for the subject site and for nearby properties that in the opinion of the assessor may affect the subject site.

5. Analyze available recent and historical aerial photographs to identify or verify past uses, developments, improvements or modifications made to the site, including ponds, tanks, oil wells, sumps, or disposal areas on the site or adjacent properties.

6. Inspect the site and interiors of all buildings for potential environmental concerns resulting from the handling, use, storage, and disposal of hazardous chemicals, underground tanks, clarifiers, and liquid-filled electrical devices.

7. Identify the present use of all immediately adjacent properties and determine the current status of any environmental conditions or investigations of these properties that could impact the site.

8. Conduct a search of appropriate records to determine the existence, if any, of environmental liens and, activity and use limitations affecting the subject site.

9. Review Chain-of-Title reports for potential environmental concerns that may affect the subject site. A title report for the property must be provided or will be obtained by LEC at an additional cost.

10. A written report describing the subject site, improvements and adjacent properties and discussing all findings and any analytical work that may have been authorized will be prepared.

11. If evidence of the presence or suspected presence of an area of environmental concern is found, the evidence and location will be described. If no evidence of the presence or suspected presence of an area of environmental concern is found, an appropriate conclusion will be provided.

A survey for lead-based paint, asbestos-containing building materials or an assessment of indoor air quality are not within the scope of this assessment. If an investigation for asbestos-containing building materials is desired, a United States Environmental Protection Agency/California Division of Occupational Health and Safety-Certified inspector is required to do this work. This highly regulated and specific survey will be covered under a separate proposal. We appreciate the opportunity to present our proposal to you. Please call us if you have any questions.

Sincerely,

Mark Leymaster
Environmental Professional

APPENDIX J

QUESTIONNAIRES

LEYMASTER ENVIRONMENTAL CONSULTING, LLC

5500 East Atherton Street, Suite 210
Long Beach, California 90815
(562) 799-9866 phone
(562) 799-1963 fax

QUESTIONNAIRE

Per EPA 40 CFR Part 312 – Standards and Practices for All Appropriate Inquires, in order to qualify for one of the *Landowner Liability Protections (LLPs)* offered by the Small Business Liability Relief and Brownfields Revitalization Act of 2001 (the *Brownfields Amendments*), the *Property owner* must provide the following information (if available) to the *environmental professional*. Failure to provide this information could result in a determination that "*all appropriate inquiry*" is not complete.

1. Are you aware of any environmental cleanup liens against the Property that are filed or recorded under federal, tribal, state or local law?

   No

2. Are you aware of any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the site and/or have been filed or recorded in a registry under federal, tribal, state or local law?

   No

3. Do you have any specialized knowledge or experience related to the Property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the Property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?

   No

4. If the Property is being sold, does the purchase price being paid for this Property reasonable reflect the fair market value of the Property? If you conclude that, there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the Property?

   Yes

LEYMASTER ENVIRONMENTAL CONSULTING, LLC

5500 East Atherton Street, Suite 210
Long Beach, California 90815
(562) 799-9866 phone
(562) 799-1963 fax

5. Are you aware of commonly known or reasonably ascertainable information about the Property that would help the environmental professional to identify conditions indicative or releases or threatened releases? For example, as user,

    a. Do you know the past uses of the Property? Yes

    b. Do you know of specific chemicals that are present or once were present at the Property? Yes, basically

    c. Do you know of spills or other chemical releases that have taken place at the Property? No

    d. Do you know of any environmental cleanups that have taken place at the Property? No

6. As the Property owner, based on your knowledge and experience related to the Property are there any obvious indicators that point to the presence or likely presence of contamination at the Property? NO

Completed by: Date:

_____Andy White_____ ____7/18/18_____
Name and Title

APPENDIX K

VAPOR ENCROACHMENT SCREEN

13131 Los Angeles Street
13131 Los Angeles Street
Irwindale, CA 91706

Inquiry Number: 5351994.2s
July 19, 2018

EDR Vapor Encroachment Screen

Prepared using EDR's Vapor Encroachment Worksheet

EDR® Environmental Data Resources Inc

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Executive Summary	**ES1**
Primary Map	**2**
Secondary Map	**3**
Map Findings	**4**
Record Sources and Currency	**GR-1**

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

The EDR Vapor Encroachment Worksheet enables EDR's customers to make certain online modifications that effects maps, text and calculations contained in this Report. As a result, maps, text and calculations contained in this Report may have been so modified. EDR has not taken any action to verify any such modifications, and this report and the findings set forth herein must be read in light of this fact. Environmental Data Resources shall not be responsible for any customer's decision to include or not include in any final report any records determined to be within the relevant minimum search distances.

This report contains information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANYSUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES.ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this report "AS IS". Any analyses, estimates, ratings, or risk codes provided in this report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction or forecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can produce information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by EDR. The report was designed to assist parties seeking to meet the search requirements of the ASTM Standard Practice for Assessment of Vapor Encroachment into Structures on Property Involved in Real Estate Transactions (E 2600).

STANDARD ENVIRONMENTAL RECORDS	Default Area of Concern (Miles)*	property	1/10	> 1/10
Federal NPL site list	1.0	0	0	1
Federal Delisted NPL site list	1.0	0	0	0
Federal CERCLIS list	0.5	0	0	1
Federal CERCLIS NFRAP site list	0.5	0	0	0
Federal RCRA CORRACTS facilities list	1.0	0	0	0
Federal RCRA non-CORRACTS TSD facilities list	0.5	0	0	0
Federal RCRA generators list	0.25	0	0	0
Federal institutional controls / engineering controls registries	0.5	0	0	1
Federal ERNS list	0.001	0	0	-
State- and tribal - equivalent NPL	1.0	0	0	0
State- and tribal - equivalent CERCLIS	1.0	0	0	0
State and tribal landfill and/or solid waste disposal site lists	0.5	0	0	0
State and tribal leaking storage tank lists	0.5	0	0	2
State and tribal registered storage tank lists	0.25	1	0	0
State and tribal institutional control / engineering control registries	not searched	-	-	-
State and tribal voluntary cleanup sites	0.5	0	0	0
State and tribal Brownfields sites	0.5	0	0	0

ADDITIONAL ENVIRONMENTAL RECORDS				
Local Brownfield lists	0.5	0	0	0
Local Lists of Landfill / Solid Waste Disposal Sites	0.5	0	0	0
Local Lists of Hazardous waste / Contaminated Sites	1.0	0	0	1
Local Lists of Registered Storage Tanks	0.25	1	1	1
Local Land Records	0.5	0	0	0
Records of Emergency Release Reports	0.5	0	0	0
Other Ascertainable Records	1.0	10	1	4

EDR HIGH RISK HISTORICAL RECORDS				
EDR Exclusive Records	1.0	0	0	0
Exclusive Recovered Govt. Archives	0.001	0	0	-

EXECUTIVE SUMMARY

EDR RECOVERED GOVERNMENT ARCHIVES

EDR Exclusive Records	1.0	0	0	0
Exclusive Recovered Govt. Archives	0.001	0	0	-

*The Default Area of Concern may be adjusted by the environmental professional using experience and professional judgement. Each category may include several databases, and each database may have a different distance. A list of individual databases is provided at the back of this report.

EXECUTIVE SUMMARY

TARGET PROPERTY INFORMATION

ADDRESS

13131 LOS ANGELES STREET
13131 LOS ANGELES STREET
IRWINDALE, CA 91706

COORDINATES

Latitude (North):	34.094488 - 34˚ 5′ 40.15045″
Longitude (West):	117.985502 - 117˚ 59′ 7.8149414″
Elevation:	355 ft. above sea level

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records.

Site	Database(s)
SPANCRETE OF CALIFORNIA 13131 LOS ANGELES ST IRWINDALE, CA 917062296	LOS ANGELES CO. HMS Facility ID: 009315-020651 Facility ID: 009315-039989 Facility ID: 009315-041609 Facility ID: 009315-047866 Facility Status: CLOS Facility Status: REM
SPANCRETE OF CALIFORNIA 13131 LOS ANGELES ST BALDWIN PARK, CA 91706	UST Facility Id: 20651
HANSON SPANCRETE PACIFIC INC. - IRWINDALE 13131 LOS ANGELES ST IRWINDALE, CA 91706	ECHO Registry ID: 110031018609 FINDS Registry ID:: 110031018609
CLARK PACIFIC IRWINDALE 13131 LOS ANGELES STREET IRWINDALE, CA 91706	ECHO Registry ID: 110070092601 FINDS Registry ID:: 110070092601

EXECUTIVE SUMMARY

Site	Database(s)
HANSON STRUCTURAL PRECAST INC 13131 LOS ANGELES ST IRWINDALE, CA 91706	SWEEPS UST Status: A Comp Number: 9116 Tank Status: A CIWQS WIP Facility Status: Historical WDS Facility Id: 4 19I000771 Facility Status: A HIST UST Facility Id: 00000055837 HAZNET GEPAID: CAL000386795 NPDES Facility Status:
HANSON STRUCTURAL PRECIAST 13131 LOS ANGELES ST IRWINDALE, CA 91706	FINDS Registry ID:: 110065914434
HEIDELBERG CEMENT GROUP 13131 LOS ANGELES ST IRWINDALE, CA 917062296	LOS ANGELES CO. HMS Facility ID: 009315-054475 Facility Status: CLOS
CLARK PACIFIC IRWINDALE 13131 LOS ANGELES STREET IRWINDALE, CA 91706	CIWQS NPDES Facility Status: Terminated Facility Status:
SPANCRETE OF CALIF 13131 LOS ANGELES ST IRWINDALE, CA 917060000	HAZNET GEPAID: CAL000003199
UNITED READY MIXED CONCRETE 13131 LOS ANGELES ST IRWINDALE, CA 917062296	LOS ANGELES CO. HMS Facility ID: 009315-009116 Facility ID: 009315-058175 Facility Status: CLOS
HANSON STRUCTURAL PRECAST 13131 LOS ANGELES ST IRWINDALE, CA 917060000	HAZNET GEPAID: CAL000221108

EXECUTIVE SUMMARY

SEARCH RESULTS

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Name	Address	Dist/Dir	Map ID	Page
SAN GABRIEL VALLEY (AREA 2) PRP: PRP NPL: NPL SEMS: SEMS ROD: ROD US ENG CONTROLS: US ENG CONTROLS	SUNSET & SAN BERNARDINO FREEWAY	1/2 - 1 SSE	Region	11
SPANCRETE OF CALIFORNIA UST: UST	13131 LOS ANGELES ST	Property	▲ A2	11
HOME SAVINGS OF AMERICA LUST: LUST LOS ANGELES CO. HMS: LOS ANGELES CO. HMS	4900 RIVERGRADE RD N	1/10 - 1/3 NNE	▲ H14	14
AGERE SYSTEMS LUST: LUST LOS ANGELES CO. HMS: LOS ANGELES CO. HMS	4920 N RIVERGRADE RD	1/10 - 1/3 NNE	▲ H15	14

ADDITIONAL ENVIRONMENTAL RECORDS

Name	Address	Dist/Dir	Map ID	Page
SAN GABRIEL VALLEY (AREA 2) PRP: PRP NPL: NPL SEMS: SEMS ROD: ROD US ENG CONTROLS: US ENG CONTROLS	SUNSET & SAN BERNARDINO FREEWAY	1/2 - 1 SSE	Region	
SAN GABRIEL VALLEY AOCONCERN: AOCONCERN	Not Reported	1/2 - 1 SE	Region	11
SPANCRETE OF CALIFORNIA LOS ANGELES CO. HMS: LOS ANGELES CO. HMS	13131 LOS ANGELES ST	Property	▲ A1	11
HANSON SPANCRETE PACIFIC INC. - IRWINDALE ECHO: ECHO FINDS: FINDS	13131 LOS ANGELES ST	Property	▲ A3	12
CLARK PACIFIC IRWINDALE ECHO: ECHO FINDS: FINDS	13131 LOS ANGELES STREET	Property	▲ A4	12
HANSON STRUCTURAL PRECAST INC	13131 LOS ANGELES ST	Property	▲ A5	12

EXECUTIVE SUMMARY

Name	Address	Dist/Dir	Map ID	Page
SWEEPS UST: SWEEPS UST CIWQS: CIWQS WIP: WIP WDS: WDS HIST UST: HIST UST HAZNET: HAZNET NPDES: NPDES				
HANSON STRUCTURAL PRECIAST FINDS: FINDS	13131 LOS ANGELES ST	Property	▲ A6	12
HEIDELBERG CEMENT GROUP LOS ANGELES CO. HMS: LOS ANGELES CO. HMS	13131 LOS ANGELES ST	Property	▲ A7	12
CLARK PACIFIC IRWINDALE CIWQS: CIWQS NPDES: NPDES	13131 LOS ANGELES STREET	Property	▲ A8	12
SPANCRETE OF CALIF HAZNET: HAZNET	13131 LOS ANGELES ST	Property	▲ A9	13
UNITED READY MIXED CONCRETE LOS ANGELES CO. HMS: LOS ANGELES CO. HMS	13131 LOS ANGELES ST	Property	▲ A10	13
HANSON STRUCTURAL PRECAST HAZNET: HAZNET	13131 LOS ANGELES ST	Property	▲ A11	13
BOB ZADINA TRUCKING INC CIWQS: CIWQS LOS ANGELES CO. HMS: LOS ANGELES CO. HMS HIST UST: HIST UST	4600 RIVERGRADE RD	<1/10 NNW	▲ 12	13
SAN GABRIEL VALLEY CORPORATE CAMPUS SWEEPS UST: SWEEPS UST CIWQS: CIWQS WIP: WIP EMI: EMI HIST UST: HIST UST NPDES: NPDES	4900 RIVERGRADE ROAD	1/10 - 1/3 NNE	▲ H13	13
HOME SAVINGS OF AMERICA LUST: LUST LOS ANGELES CO. HMS: LOS ANGELES CO. HMS	4900 RIVERGRADE RD N	1/10 - 1/3 NNE	▲ H14	14
AGERE SYSTEMS LUST: LUST LOS ANGELES CO. HMS: LOS ANGELES CO. HMS	4920 N RIVERGRADE RD	1/10 - 1/3 NNE	▲ H15	14

EDR HIGH RISK HISTORICAL RECORDS

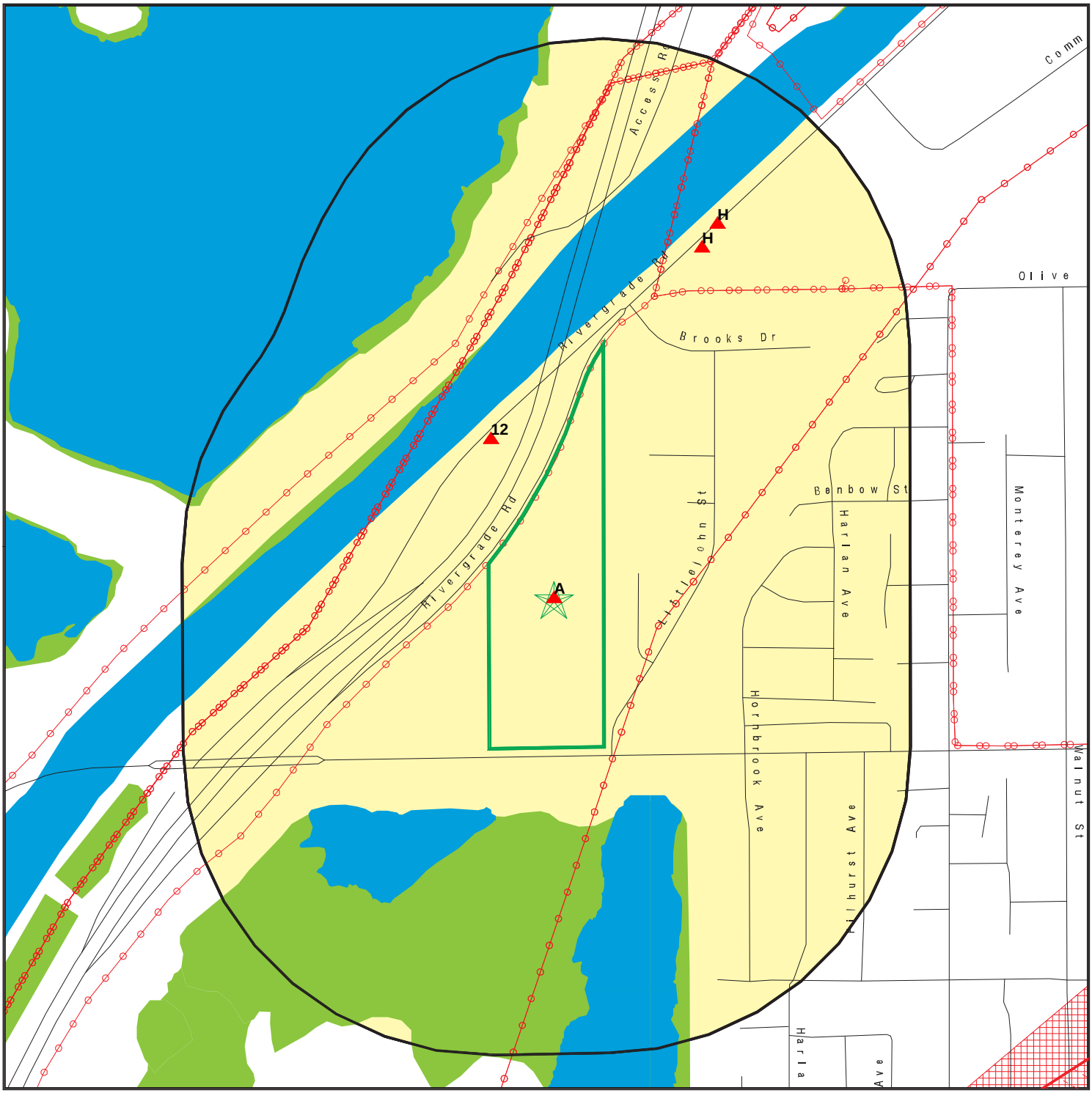
Name	Address	Dist/Dir	Map ID	Page
Not Reported				

EDR RECOVERED GOVERNMENT ARCHIVES

EXECUTIVE SUMMARY

Name	Address	Dist/Dir	Map ID	Page
Not Reported				

PRIMARY MAP - 5351994.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 300 1/3 1/2 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 13131 Los Angeles Street	CLIENT: Leymaster Env. Consulting
ADDRESS: 13131 Los Angeles Street Irwindale CA 91706	CONTACT: Travis Knight INQUIRY #: 5351994.2s
LAT/LONG: 34.094488 / 117.985502	DATE: July 03, 2018 3:03 pm

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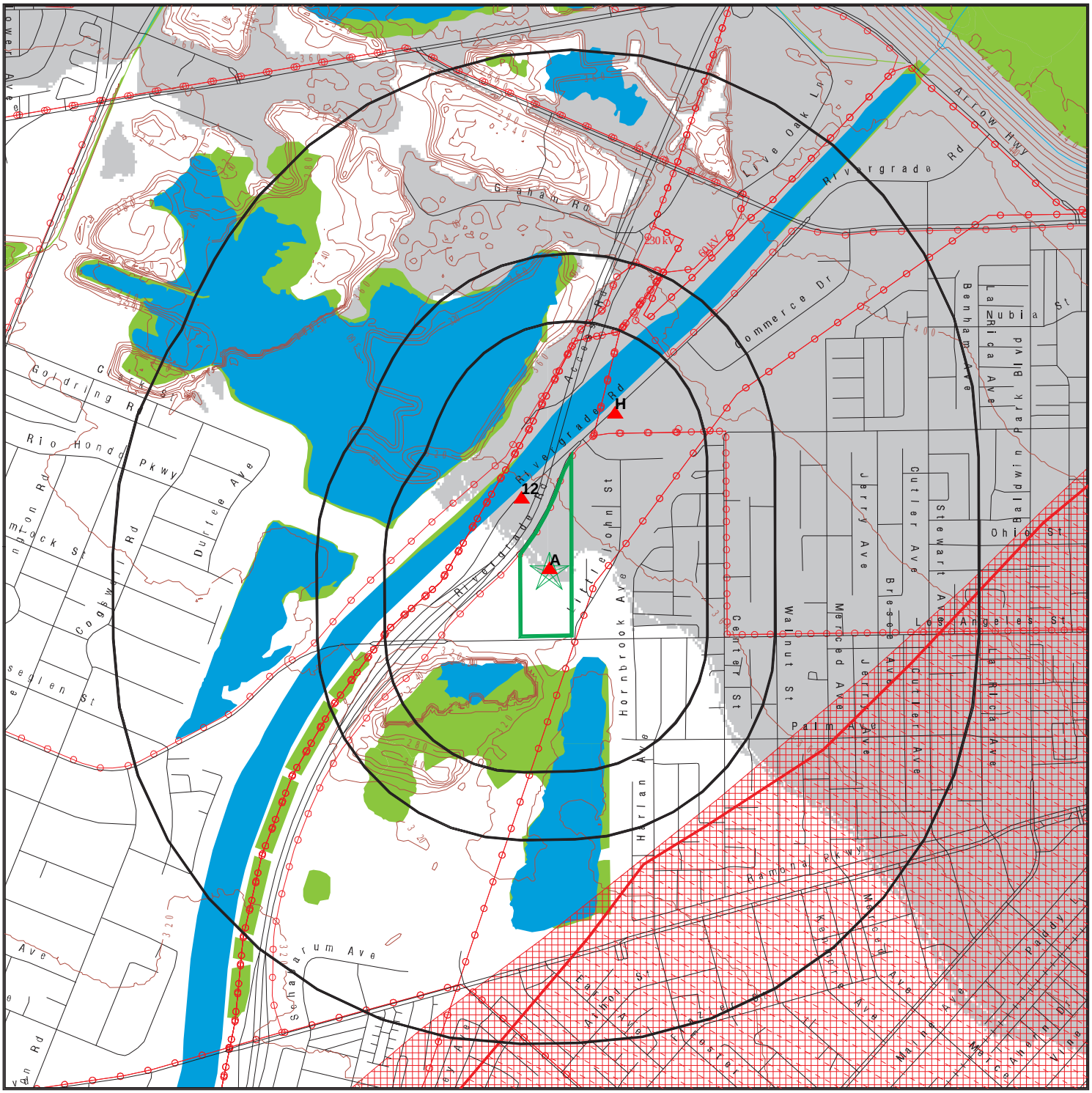
SECONDARY MAP - 5351994.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Upgradient Area

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 13131 Los Angeles Street	CLIENT: Leymaster Env. Consulting
ADDRESS: 13131 Los Angeles Street Irwindale CA 91706	CONTACT: Travis Knight
LAT/LONG: 34.094488 / 117.985502	INQUIRY #: 5351994.2s DATE: July 03, 2018 3:00 pm

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LEGEND

FACILITY NAME **FACILITY ADDRESS, CITY, ST, ZIP**			EDR SITE ID NUMBER
◆ **MAP ID#**	Direction Distance Range Relative Elevation	(Distance feet / miles) Feet Above Sea Level	ASTM 2600 Record Sources found in this report. Each database searched has been assigned to one or more categories. For detailed information about categorization, see the section of the report Records Searched and Currency.

Worksheet:

Comments:
Comments may be added on the online Vapor Encroachment Worksheet.

DATABASE ACRONYM: Applicable categories (A hoverbox with database description).

SAN GABRIEL VALLEY (AREA 2) SUNSET & SAN BERNARDINO FREEWAY, BALDWIN PARK, CA, 91706			1000114961
Region	SSE 1/2 - 1	(3015 ft. / 0.571 mi.)	Federal NPL site list Federal CERCLIS list Federal institutional controls / engineering controls registries Other Ascertainable Records

Worksheet:

SAN GABRIEL VALLEY Not Reported, , CA,			CCA0000001
Region	SE 1/2 - 1	(2837 ft. / 0.537 mi.)	Local Lists of Hazardous waste / Contaminated Sites

Worksheet:

SPANCRETE OF CALIFORNIA 13131 LOS ANGELES ST, IRWINDALE, CA, 917062296			S105422031
▲ A1	Target Property	355 ft. Above Sea Level	Other Ascertainable Records

Worksheet:

SPANCRETE OF CALIFORNIA 13131 LOS ANGELES ST, BALDWIN PARK, CA, 91706			U004049266
▲ A2	Target Property	355 ft. Above Sea Level	State and tribal registered storage tank lists

Worksheet:

HANSON SPANCRETE PACIFIC INC. - IRWINDALE 13131 LOS ANGELES ST, IRWINDALE, CA, 91706		1010374010
▲ A3	Target Property 355 ft. Above Sea Level	Other Ascertainable Records

Worksheet:

CLARK PACIFIC IRWINDALE 13131 LOS ANGELES STREET, IRWINDALE, CA, 91706		1023695531
▲ A4	Target Property 355 ft. Above Sea Level	Other Ascertainable Records

Worksheet:

HANSON STRUCTURAL PRECAST INC 13131 LOS ANGELES ST, IRWINDALE, CA, 91706		U001568832
▲ A5	Target Property 355 ft. Above Sea Level	Local Lists of Registered Storage Tanks Other Ascertainable Records

Worksheet:

HANSON STRUCTURAL PRECIAST 13131 LOS ANGELES ST, IRWINDALE, CA, 91706		1023299465
▲ A6	Target Property 355 ft. Above Sea Level	Other Ascertainable Records

Worksheet:

HEIDELBERG CEMENT GROUP 13131 LOS ANGELES ST, IRWINDALE, CA, 917062296		S110745035
▲ A7	Target Property 355 ft. Above Sea Level	Other Ascertainable Records

Worksheet:

CLARK PACIFIC IRWINDALE 13131 LOS ANGELES STREET, IRWINDALE, CA, 91706		S119084540
▲ A8	Target Property 355 ft. Above Sea Level	Other Ascertainable Records

Worksheet:

SPANCRETE OF CALIF 13131 LOS ANGELES ST, IRWINDALE, CA, 917060000			S113022781
▲ A9	Target Property		Other Ascertainable Records
		355 ft. Above Sea Level	

Worksheet:

UNITED READY MIXED CONCRETE 13131 LOS ANGELES ST, IRWINDALE, CA, 917062296			S105422030
▲ A10	Target Property		Other Ascertainable Records
		355 ft. Above Sea Level	

Worksheet:

HANSON STRUCTURAL PRECAST 13131 LOS ANGELES ST, IRWINDALE, CA, 917060000			S113111523
▲ A11	Target Property		Other Ascertainable Records
		355 ft. Above Sea Level	

Worksheet:

BOB ZADINA TRUCKING INC 4600 RIVERGRADE RD, IRWINDALE, CA, 91706			S106024669
▲ 12	NNW <1/10	(375 ft. / 0.071 mi.)	Local Lists of Registered Storage Tanks Other Ascertainable Records
	4 ft. Higher Elevation	359 ft. Above Sea Level	

Worksheet:

Impact on Target Property: VEC does not exist

Comments: The hydrologic characteristics of the physical setting suggest that vapors would not migrate from the source to the target property. Depth to groundwater is greater than 250 feet.

Conditions:

Petroleum Hydrocarbon Chemicals of Concern: YES

Groundwater Flow Gradient:

Upgradient or Indeterminate: YES

SAN GABRIEL VALLEY CORPORATE CAMPUS 4900 RIVERGRADE ROAD, IRWINDALE, CA, 91706			1000198492
▲ H13	NNE 1/10 - 1/3	(792 ft. / 0.15 mi.)	Local Lists of Registered Storage Tanks Other Ascertainable Records
	14 ft. Higher Elevation	369 ft. Above Sea Level	

Worksheet:

Impact on Target Property: VEC does not exist

Comments: The source is not within the area of concern, based on its distance, gradient and suspected chemical of concern.

Conditions:

Petroleum Hydrocarbon Chemicals of Concern: YES

Groundwater Flow Gradient:

Upgradient or Indeterminate: YES

HOME SAVINGS OF AMERICA 4900 RIVERGRADE RD N, IRWINDALE, CA, 91706			S109690851
▲ H14	NNE 1/10 - 1/3	(792 ft. / 0.15 mi.)	State and tribal leaking storage tank lists Other Ascertainable Records
	14 ft. Higher Elevation	369 ft. Above Sea Level	

Worksheet:

Impact on Target Property: VEC does not exist

Comments: The source is not within the area of concern, based on its distance, gradient and suspected chemical of concern. This is a closed LUST case.

Conditions:

Petroleum Hydrocarbon Chemicals of Concern: YES

Groundwater Flow Gradient:

Upgradient or Indeterminate: YES

AGERE SYSTEMS 4920 N RIVERGRADE RD, IRWINDALE, CA, 91706			S106024779
▲ H15	NNE 1/10 - 1/3	(952 ft. / 0.18 mi.)	State and tribal leaking storage tank lists Other Ascertainable Records
	15 ft. Higher Elevation	370 ft. Above Sea Level	

Worksheet:

Impact on Target Property: VEC does not exist

Comments: The source is not within the area of concern, based on its distance, gradient and suspected chemical of concern. This is a closed LUST Case.

Conditions:

Petroleum Hydrocarbon Chemicals of Concern: YES

Groundwater Flow Gradient:

Upgradient or Indeterminate: YES

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
ENVIRONMENTAL RECORDS						
Federal NPL site list						
US	NPL	National Priority List	EPA	05/13/2018	05/30/2018	06/22/2018
US	Proposed NPL	Proposed National Priority List Sites	EPA	05/13/2018	05/30/2018	06/22/2018
US	NPL LIENS	Federal Superfund Liens	EPA	10/15/1991	02/02/1994	03/30/1994
Federal CERCLIS list						
US	SEMS	Superfund Enterprise Management System	EPA	05/18/2018	05/30/2018	06/22/2018
Federal RCRA CORRACTS facilities list						
US	CORRACTS	Corrective Action Report	EPA	03/01/2018	03/28/2018	06/22/2018
Federal RCRA TSD facilities list						
US	RCRA-TSDF	RCRA - Treatment, Storage and Disposal	Environmental Protection Agency	03/01/2018	03/28/2018	06/22/2018
Federal RCRA generators list						
US	RCRA-LQG	RCRA - Large Quantity Generators	Environmental Protection Agency	03/01/2018	03/28/2018	06/22/2018
US	RCRA-SQG	RCRA - Small Quantity Generators	Environmental Protection Agency	03/01/2018	03/28/2018	06/22/2018
US	RCRA-CESQG	RCRA - Conditionally Exempt Small Quantity Generators	Environmental Protection Agency	03/01/2018	03/28/2018	06/22/2018
Federal institutional controls / engineering controls registries						
US	LUCIS	Land Use Control Information System	Department of the Navy	02/16/2018	02/22/2018	05/11/2018
US	US ENG CONTROLS	Engineering Controls Sites List	Environmental Protection Agency	02/13/2018	02/27/2018	05/11/2018
US	US INST CONTROL	Sites with Institutional Controls	Environmental Protection Agency	02/13/2018	02/27/2018	05/11/2018
Federal ERNS list						
US	ERNS	Emergency Response Notification System	National Response Center, United States Coast	03/19/2018	03/27/2018	06/08/2018
State and tribal - equivalent NPL						
CA	RESPONSE	State Response Sites	Department of Toxic Substances Control	04/30/2018	05/02/2018	06/22/2018
State and tribal - equivalent CERCLIS						
CA	ENVIROSTOR	EnviroStor Database	Department of Toxic Substances Control	04/30/2018	05/02/2018	06/22/2018
State and tribal landfill / solid waste disposal						
CA	SWF/LF (SWIS)	Solid Waste Information System	Department of Resources Recycling and Recover	05/14/2018	05/16/2018	06/22/2018
State and tribal leaking storage tank lists						
CA	LUST REG 1	Active Toxic Site Investigation	California Regional Water Quality Control Boa	02/01/2001	02/28/2001	03/29/2001
CA	LUST REG 9	Leaking Underground Storage Tank Report	California Regional Water Quality Control Boa	03/01/2001	04/23/2001	05/21/2001
CA	LUST	Leaking Underground Fuel Tank Report (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	03/21/2018
CA	LUST REG 5	Leaking Underground Storage Tank Database	California Regional Water Quality Control Boa	07/01/2008	07/22/2008	07/31/2008
CA	LUST REG 8	Leaking Underground Storage Tanks	California Regional Water Quality Control Boa	02/14/2005	02/15/2005	03/28/2005
CA	LUST REG 2	Fuel Leak List	California Regional Water Quality Control Boa	09/30/2004	10/20/2004	11/19/2004
CA	LUST REG 6V	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	06/07/2005	06/07/2005	06/29/2005

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CA	LUST REG 3	Leaking Underground Storage Tank Database	California Regional Water Quality Control Boa	05/19/2003	05/19/2003	06/02/2003
CA	LUST REG 6L	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	09/09/2003	09/10/2003	10/07/2003
CA	LUST REG 4	Underground Storage Tank Leak List	California Regional Water Quality Control Boa	09/07/2004	09/07/2004	10/12/2004
CA	LUST REG 7	Leaking Underground Storage Tank Case Listing	California Regional Water Quality Control Boa	02/26/2004	02/26/2004	03/24/2004
US	INDIAN LUST R10	Leaking Underground Storage Tanks on Indian Land	EPA Region 10	10/24/2017	01/23/2018	04/13/2018
US	INDIAN LUST R9	Leaking Underground Storage Tanks on Indian Land	Environmental Protection Agency	09/30/2017	01/23/2018	04/13/2018
US	INDIAN LUST R8	Leaking Underground Storage Tanks on Indian Land	EPA Region 8	10/12/2017	01/23/2018	04/13/2018
US	INDIAN LUST R7	Leaking Underground Storage Tanks on Indian Land	EPA Region 7	10/12/2017	01/23/2018	04/13/2018
US	INDIAN LUST R6	Leaking Underground Storage Tanks on Indian Land	EPA Region 6	01/06/2018	01/23/2018	04/13/2018
US	INDIAN LUST R4	Leaking Underground Storage Tanks on Indian Land	EPA Region 4	10/14/2017	01/23/2018	04/13/2018
US	INDIAN LUST R1	Leaking Underground Storage Tanks on Indian Land	EPA Region 1	10/14/2017	01/23/2018	04/13/2018
US	INDIAN LUST R5	Leaking Underground Storage Tanks on Indian Land	EPA, Region 5	10/16/2017	01/23/2018	04/13/2018
CA	CPS-SLIC	Statewide SLIC Cases (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	03/21/2018
CA	SLIC REG 1	Active Toxic Site Investigations	California Regional Water Quality Control Boa	04/03/2003	04/07/2003	04/25/2003
CA	SLIC REG 2	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board San Fran	09/30/2004	10/20/2004	11/19/2004
CA	SLIC REG 3	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Regional Water Quality Control Boa	05/18/2006	05/18/2006	06/15/2006
CA	SLIC REG 4	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Region Water Quality Control Board Los Angele	11/17/2004	11/18/2004	01/04/2005
CA	SLIC REG 5	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board Central	04/01/2005	04/05/2005	04/21/2005
CA	SLIC REG 6V	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	Regional Water Quality Control Board, Victorv	05/24/2005	05/25/2005	06/16/2005
CA	SLIC REG 6L	SLIC Sites	California Regional Water Quality Control Boa	09/07/2004	09/07/2004	10/12/2004
CA	SLIC REG 7	SLIC List	California Regional Quality Control Board, Co	11/24/2004	11/29/2004	01/04/2005
CA	SLIC REG 8	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Region Water Quality Control Board	04/03/2008	04/03/2008	04/14/2008
CA	SLIC REG 9	Spills, Leaks, Investigation & Cleanup Cost Recovery Listing	California Regional Water Quality Control Boa	09/10/2007	09/11/2007	09/28/2007
State and tribal registered storage tank lists						
CA	UST	Active UST Facilities	SWRCB	03/12/2018	03/14/2018	03/29/2018
CA	UST CLOSURE	Proposed Closure of Underground Storage Tank (UST) Cases	State Water Resources Control Board	03/08/2018	03/14/2018	05/04/2018
CA	MILITARY UST SITES	Military UST Sites (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
CA	UST MENDOCINO	Mendocino County UST Database	Department of Public Health	02/28/2018	03/01/2018	03/28/2018
CA	AST	Aboveground Petroleum Storage Tank Facilities	California Environmental Protection Agency	07/06/2016	07/12/2016	09/19/2016
US	INDIAN UST R8	Underground Storage Tanks on Indian Land	EPA Region 8	10/12/2017	01/23/2018	04/13/2018
US	INDIAN UST R1	Underground Storage Tanks on Indian Land	EPA, Region 1	10/14/2017	01/23/2018	04/13/2018
US	INDIAN UST R6	Underground Storage Tanks on Indian Land	EPA Region 6	04/24/2017	07/27/2017	12/08/2017
US	INDIAN UST R7	Underground Storage Tanks on Indian Land	EPA Region 7	01/13/2018	01/23/2018	04/13/2018
US	INDIAN UST R5	Underground Storage Tanks on Indian Land	EPA Region 5	10/16/2017	01/23/2018	04/13/2018
US	INDIAN UST R10	Underground Storage Tanks on Indian Land	EPA Region 10	10/24/2017	01/23/2018	04/13/2018
US	INDIAN UST R4	Underground Storage Tanks on Indian Land	EPA Region 4	10/14/2017	01/23/2018	04/13/2018
US	INDIAN UST R9	Underground Storage Tanks on Indian Land	EPA Region 9	09/30/2017	01/23/2018	04/13/2018
US	FEMA UST	Underground Storage Tank Listing	FEMA	05/15/2017	05/30/2017	10/13/2017

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
State and tribal voluntary cleanup sites						
CA	VCP	Voluntary Cleanup Program Properties	Department of Toxic Substances Control	04/30/2018	05/02/2018	06/22/2018
US	INDIAN VCP R1	Voluntary Cleanup Priority Listing	EPA, Region 1	07/27/2015	09/29/2015	02/18/2016
US	INDIAN VCP R7	Voluntary Cleanup Priority Lisitng	EPA, Region 7	03/20/2008	04/22/2008	05/19/2008
State and tribal Brownfields sites						
CA	BROWNFIELDS	Considered Brownfieds Sites Listing	State Water Resources Control Board	03/26/2018	03/27/2018	05/04/2018
Other Records						
US	CONSENT	Superfund (CERCLA) Consent Decrees	Department of Justice, Consent Decree Library	03/31/2018	04/16/2018	06/29/2018
US	ROD	Records Of Decision	EPA	05/13/2018	05/30/2018	06/29/2018
US	LIENS 2	CERCLA Lien Information	Environmental Protection Agency	05/13/2018	05/30/2018	06/29/2018
CA	HIST CAL-SITES	Calsites Database	Department of Toxic Substance Control	08/08/2005	08/03/2006	08/24/2006
US	DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations	EPA, Region 9	01/12/2009	05/07/2009	09/21/2009
CA	SWRCY	Recycler Database	Department of Conservation	03/12/2018	03/14/2018	05/04/2018
CA	CA FID UST	Facility Inventory Database	California Environmental Protection Agency	10/31/1994	09/05/1995	09/29/1995
CA	HIST UST	Hazardous Substance Storage Container Database	State Water Resources Control Board	10/15/1990	01/25/1991	02/12/1991
CA	SAN FRANCISCO AST	Aboveground Storage Tank Site Listing	San Francisco County Department of Public Hea	04/19/2018	04/24/2018	05/04/2018
CA	SWEEPS UST	SWEEPS UST Listing	State Water Resources Control Board	06/01/1994	07/07/2005	08/11/2005
US	LEAD SMELTER 1	Lead Smelter Sites	Environmental Protection Agency	05/13/2018	05/30/2018	06/29/2018
US	LEAD SMELTER 2	Lead Smelter Sites	American Journal of Public Health	04/05/2001	10/27/2010	12/02/2010
US	2020 COR ACTION	2020 Corrective Action Program List	Environmental Protection Agency	04/22/2013	03/03/2015	03/09/2015
US	PCB TRANSFORMER	PCB Transformer Registration Database	Environmental Protection Agency	05/24/2017	11/30/2017	12/15/2017
US	FUSRAP	Formerly Utilized Sites Remedial Action Program	Department of Energy	12/23/2016	12/27/2016	02/17/2017
US	EPA WATCH LIST	EPA WATCH LIST	Environmental Protection Agency	08/30/2013	03/21/2014	06/17/2014
US	US FIN ASSUR	Financial Assurance Information	Environmental Protection Agency	03/01/2018	03/27/2018	06/22/2018
US	US AIRS MINOR	Air Facility System Data	EPA	10/12/2016	10/26/2016	02/03/2017
US	US AIRS (AFS)	Aerometric Information Retrieval System Facility Subsystem (	EPA	10/12/2016	10/26/2016	02/03/2017
US	COAL ASH DOE	Steam-Electric Plant Operation Data	Department of Energy	12/31/2005	08/07/2009	10/22/2009
US	COAL ASH EPA	Coal Combustion Residues Surface Impoundments List	Environmental Protection Agency	07/01/2014	09/10/2014	10/20/2014
US	SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing	Environmental Protection Agency	01/01/2017	02/03/2017	04/07/2017
US	US HIST CDL	National Clandestine Laboratory Register	Drug Enforcement Administration	02/22/2018	03/01/2018	05/11/2018
US	Delisted NPL	National Priority List Deletions	EPA	05/13/2018	05/30/2018	06/22/2018
US	SEMS-ARCHIVE	Superfund Enterprise Management System Archive	EPA	05/18/2018	05/30/2018	06/22/2018
US	RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated	Environmental Protection Agency	03/01/2018	03/28/2018	06/22/2018
US	HMIRS	Hazardous Materials Information Reporting System	U.S. Department of Transportation	03/26/2018	03/27/2018	06/08/2018
US	DOT OPS	Incident and Accident Data	Department of Transporation, Office of Pipeli	07/31/2012	08/07/2012	09/18/2012
US	US CDL	Clandestine Drug Labs	Drug Enforcement Administration	02/22/2018	03/01/2018	05/11/2018
US	US BROWNFIELDS	A Listing of Brownfields Sites	Environmental Protection Agency	03/19/2018	03/21/2018	06/08/2018
US	DOD	Department of Defense Sites	USGS	12/31/2005	11/10/2006	01/11/2007
US	FEDLAND	Federal and Indian Lands	U.S. Geological Survey	12/31/2005	02/06/2006	01/11/2007
US	FUDS	Formerly Used Defense Sites	U.S. Army Corps of Engineers	01/31/2015	07/08/2015	10/13/2015
US	UMTRA	Uranium Mill Tailings Sites	Department of Energy	06/23/2017	10/11/2017	11/03/2017
US	ODI	Open Dump Inventory	Environmental Protection Agency	06/30/1985	08/09/2004	09/17/2004
US	US MINES	Mines Master Index File	Department of Labor, Mine Safety and Health A	05/03/2018	05/31/2018	06/29/2018
US	US MINES 2	Ferrous and Nonferrous Metal Mines Database Listing	USGS	12/05/2005	02/29/2008	04/18/2008

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
US	US MINES 3	Active Mines & Mineral Plants Database Listing	USGS	04/14/2011	06/08/2011	09/13/2011
US	PRP	Potentially Responsible Parties	EPA	10/25/2013	10/17/2014	10/20/2014
US	TRIS	Toxic Chemical Release Inventory System	EPA	12/31/2016	01/10/2018	01/12/2018
US	TSCA	Toxic Substances Control Act	EPA	12/31/2016	06/21/2017	01/05/2018
US	FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA/Office of Prevention, Pesticides and Toxi	04/09/2009	04/16/2009	05/11/2009
US	FTTS INSP	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fu	EPA	04/09/2009	04/16/2009	05/11/2009
US	HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	HIST FTTS INSP	FIFRA/TSCA Tracking System Inspection & Enforcement Case Lis	Environmental Protection Agency	10/19/2006	03/01/2007	04/10/2007
US	SSTS	Section 7 Tracking Systems	EPA	12/31/2009	12/10/2010	02/25/2011
US	ICIS	Integrated Compliance Information System	Environmental Protection Agency	11/18/2016	11/23/2016	02/10/2017
US	PADS	PCB Activity Database System	EPA	06/01/2017	06/09/2017	10/13/2017
US	MLTS	Material Licensing Tracking System	Nuclear Regulatory Commission	08/30/2016	09/08/2016	10/21/2016
US	RADINFO	Radiation Information Database	Environmental Protection Agency	04/03/2018	04/05/2018	06/29/2018
US	FINDS	Facility Index System/Facility Registry System	EPA	02/21/2018	02/23/2018	03/23/2018
US	RAATS	RCRA Administrative Action Tracking System	EPA	04/17/1995	07/03/1995	08/07/1995
US	RMP	Risk Management Plans	Environmental Protection Agency	11/02/2017	11/17/2017	12/08/2017
US	BRS	Biennial Reporting System	EPA/NTIS	12/31/2015	02/22/2017	09/28/2017
US	PWS	Public Water System Data	EPA	12/17/2013	01/09/2014	10/15/2014
US	INDIAN RESERV	Indian Reservations	USGS	12/31/2014	07/14/2015	01/10/2017
US	INDIAN ODI	Report on the Status of Open Dumps on Indian Lands	Environmental Protection Agency	12/31/1998	12/03/2007	01/24/2008
CA	CA BOND EXP. PLAN	Bond Expenditure Plan	Department of Health Services	01/01/1989	07/27/1994	08/02/1994
CA	CDL	Clandestine Drug Labs	Department of Toxic Substances Control	06/30/2017	08/18/2017	09/21/2017
CA	CHMIRS	California Hazardous Material Incident Report System	Office of Emergency Services	04/06/2018	04/24/2018	06/14/2018
CA	CORTESE	"Cortese" Hazardous Waste & Substances Sites List	CAL EPA/Office of Emergency Information	03/26/2018	03/27/2018	05/04/2018
CA	CUPA SAN FRANCISCO CO	CUPA SAN FRANCISCO CO	San Francisco County Department of Environmen	04/20/2018	04/24/2018	05/04/2018
CA	CUPA LIVERMORE-PLEASANTON	CUPA Facility Listing	Livermore-Pleasanton Fire Department	04/03/2018	05/07/2018	06/15/2018
CA	DEED	Deed Restriction Listing	DTSC and SWRCB	02/08/2018	02/08/2018	02/08/2018
CA	DRYCLEAN AVAQMD	DRYCLEAN AVAQMD	Antelope Valley Air Quality Management Distri	03/08/2018	03/13/2018	05/04/2018
CA	DRYCLEANERS	Cleaner Facilities	Department of Toxic Substance Control	03/27/2018	03/29/2018	05/04/2018
CA	DRYCLEAN SOUTH COAST	DRYCLEAN SOUTH COAST	South Coast Air Quality Management District	03/16/2018	03/20/2018	05/04/2018
CA	EMI	Emissions Inventory Data	California Air Resources Board	12/31/2015	03/21/2017	08/15/2017
CA	ENF	Enforcement Action Listing	State Water Resoruces Control Board	01/22/2018	01/24/2018	03/19/2018
CA	Financial Assurance 1	Financial Assurance Information Listing	Department of Toxic Substances Control	04/18/2018	04/20/2018	06/19/2018
CA	Financial Assurance 2	Financial Assurance Information Listing	California Integrated Waste Management Board	05/14/2018	05/15/2018	06/22/2018
CA	HAULERS	Registered Waste Tire Haulers Listing	Integrated Waste Management Board	02/08/2018	02/09/2018	03/20/2018
CA	HAZNET	Facility and Manifest Data	California Environmental Protection Agency	12/31/2016	07/12/2017	10/17/2017
CA	HIST CORTESE	Hazardous Waste & Substance Site List	Department of Toxic Substances Control	04/01/2001	01/22/2009	04/08/2009
CA	HWP	EnviroStor Permitted Facilities Listing	Department of Toxic Substances Control	02/20/2018	02/21/2018	04/03/2018
CA	HWT	Registered Hazardous Waste Transporter Database	Department of Toxic Substances Control	04/09/2018	04/11/2018	06/19/2018
CA	ICE	ICE	Department of Toxic Subsances Control	02/20/2018	02/21/2018	04/03/2018
CA	LDS	Land Disposal Sites Listing (GEOTRACKER)	State Water Qualilty Control Board	03/12/2018	03/14/2018	05/04/2018
CA	LIENS	Environmental Liens Listing	Department of Toxic Substances Control	01/28/2018	03/01/2018	04/16/2018
CA	MCS	Military Cleanup Sites Listing (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	03/21/2018
CA	MINES	Mines Site Location Listing	Department of Conservation	03/12/2018	03/14/2018	05/04/2018
CA	MWMP	Medical Waste Management Program Listing	Department of Public Health	02/27/2018	03/05/2018	04/16/2018
CA	NPDES	NPDES Permits Listing	State Water Resources Control Board	03/14/2018	03/14/2018	05/04/2018
CA	PEST LIC	Pesticide Regulation Licenses Listing	Department of Pesticide Regulation	03/05/2018	03/05/2018	04/19/2018

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CA	PROC	Certified Processors Database	Department of Conservation	03/12/2018	03/14/2018	05/04/2018
CA	NOTIFY 65	Proposition 65 Records	State Water Resources Control Board	03/23/2018	03/27/2018	05/04/2018
CA	SCH	School Property Evaluation Program	Department of Toxic Substances Control	04/30/2018	05/02/2018	06/22/2018
CA	SPILLS 90	SPILLS90 data from FirstSearch	FirstSearch	06/06/2012	01/03/2013	02/22/2013
CA	TOXIC PITS	Toxic Pits Cleanup Act Sites	State Water Resources Control Board	07/01/1995	08/30/1995	09/26/1995
CA	UIC	UIC Listing	Deaprtment of Conservation	03/12/2018	03/14/2018	05/04/2018
CA	WASTEWATER PITS	Oil Wastewater Pits Listing	RWQCB, Central Valley Region	04/10/2018	04/13/2018	06/19/2018
CA	WDS	Waste Discharge System	State Water Resources Control Board	06/19/2007	06/20/2007	06/29/2007
CA	WIP	Well Investigation Program Case List	Los Angeles Water Quality Control Board	07/03/2009	07/21/2009	08/03/2009
CA	WMUDS/SWAT	Waste Management Unit Database	State Water Resources Control Board	04/01/2000	04/10/2000	05/10/2000
CA	MILITARY PRIV SITES	Military Privatized Sites (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
US	DOCKET HWC	Hazardous Waste Compliance Docket Listing	Environmental Protection Agency	01/04/2018	01/19/2018	04/13/2018
US	UXO	Unexploded Ordnance Sites	Department of Defense	09/30/2016	10/31/2017	01/12/2018
CA	CERS	CalEPA Regulated Site Portal Data	California Environmental Protection Agency	04/23/2018	04/24/2018	06/07/2018
CA	OTHER OIL GAS	OTHER OIL & GAS (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
CA	PROD WATER PONDS	PROD WATER PONDS (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
CA	PROJECT	PROJECT (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
CA	CERS TANKS	California Environmental Reporting System (CERS) Tanks	California Environmental Protection Agency	04/23/2018	04/24/2018	06/07/2018
CA	NON-CASE INFO	NON-CASE INFO (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
CA	SAMPLING POINT	SAMPLING POINT (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
US	IHS OPEN DUMPS	Open Dumps on Indian Land	Department of Health & Human Serivces, Indian	04/01/2014	08/06/2014	01/29/2015
CA	WELL STIM PROJ	WELL SAMP PROJ (GEOTRACKER)	State Water Resources Control Board	03/12/2018	03/14/2018	05/04/2018
CA	CIWQS	The California Integrated Water Quality System	State Water Resources Control Board	03/05/2018	03/05/2018	05/04/2018
CA	CERS HAZ WASTE	CERS HAZ WASTE	CalEPA	04/23/2018	04/24/2018	06/07/2018
US	FUELS PROGRAM	EPA Fuels Program Registered Listing	EPA	02/20/2018	02/21/2018	03/23/2018
US	ECHO	Enforcement & Compliance History Information	Environmental Protection Agency	02/25/2018	03/17/2018	06/08/2018
US	ABANDONED MINES	Abandoned Mines	Department of Interior	03/08/2018	03/13/2018	06/08/2018
CA	UIC GEO	UIC GEO (GEOTRACKER)	State Water Resource Control Board	03/12/2018	03/14/2018	05/04/2018
HISTORICAL USE RECORDS						
US	EDR MGP	EDR Proprietary Manufactured Gas Plants	EDR, Inc.			
US	EDR Hist Auto	EDR Exclusive Historical Auto Stations	EDR, Inc.			
US	EDR Hist Cleaner	EDR Exclusive Historical Cleaners	EDR, Inc.			
CA	RGA LF	Recovered Government Archive Solid Waste Facilities List	Department of Resources Recycling and Recover		07/01/2013	01/13/2014
CA	RGA LUST	Recovered Government Archive Leaking Underground Storage Tan	State Water Resources Control Board		07/01/2013	12/30/2013

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
COUNTY RECORDS						
CA	CS ALAMEDA	Contaminated Sites	Alameda County Environmental Health Services	04/05/2018	04/10/2018	06/14/2018
CA	UST ALAMEDA	Underground Tanks	Alameda County Environmental Health Services	04/05/2018	04/10/2018	05/04/2018
CA	CUPA AMADOR	CUPA Facility List	Amador County Environmental Health	03/31/2018	04/05/2018	06/14/2018
CA	CUPA BUTTE	CUPA Facility Listing	Public Health Department	04/21/2017	04/25/2017	08/09/2017
CA	CUPA CALVERAS	CUPA Facility Listing	Calveras County Environmental Health	05/07/2018	05/09/2018	06/14/2018
CA	CUPA COLUSA	CUPA Facility List	Health & Human Services	02/26/2018	03/01/2018	03/15/2018
CA	SL CONTRA COSTA	Site List	Contra Costa Health Services Department	02/22/2018	02/27/2018	04/16/2018
CA	CUPA DEL NORTE	CUPA Facility List	Del Norte County Environmental Health Divisio	04/27/2018	05/02/2018	06/15/2018
CA	CUPA EL DORADO	CUPA Facility List	El Dorado County Environmental Management Dep	03/05/2018	03/08/2018	04/16/2018
CA	CUPA FRESNO	CUPA Resources List	Dept. of Community Health	03/01/2018	03/05/2018	03/14/2018
CA	CUPA GLENN	CUPA Facility List	Glenn County Air Pollution Control District	01/22/2018	01/24/2018	03/14/2018
CA	CUPA HUMBOLDT	CUPA Facility List	Humboldt County Environmental Health	03/05/2018	03/08/2018	04/30/2018
CA	CUPA IMPERIAL	CUPA Facility List	San Diego Border Field Office	04/23/2018	04/25/2018	06/14/2018
CA	CUPA INYO	CUPA Facility List	Inyo County Environmental Health Services	04/02/2018	04/03/2018	06/14/2018
CA	UST KERN	Underground Storage Tank Sites & Tank Listing	Kern County Environment Health Services Depar	02/02/2018	02/02/2018	03/28/2018
CA	CUPA KINGS	CUPA Facility List	Kings County Department of Public Health	11/14/2017	11/17/2017	12/15/2017
CA	CUPA LAKE	CUPA Facility List	Lake County Environmental Health	05/09/2018	05/11/2018	06/14/2018
CA	CUPA LASSEN	CUPA Facility List	Lassen County Environmental Health	01/22/2018	01/24/2018	03/14/2018
CA	AOCONCERN	San Gabriel Valley Areas of Concern	EPA Region 9	03/30/2009	03/31/2009	10/23/2009
CA	HMS LOS ANGELES	HMS: Street Number List	Department of Public Works	04/12/2018	04/16/2018	06/15/2018
CA	LF LOS ANGELES	List of Solid Waste Facilities	La County Department of Public Works	04/16/2018	04/17/2018	06/19/2018
CA	LF LOS ANGELES CITY	City of Los Angeles Landfills	Engineering & Construction Division	01/01/2018	05/01/2018	05/14/2018
CA	SITE MIT LOS ANGELES	Site Mitigation List	Community Health Services	04/01/2018	04/17/2018	06/19/2018
CA	UST EL SEGUNDO	City of El Segundo Underground Storage Tank	City of El Segundo Fire Department	01/21/2017	04/19/2017	05/10/2017
CA	UST LONG BEACH	City of Long Beach Underground Storage Tank	City of Long Beach Fire Department	03/09/2017	03/10/2017	05/03/2017
CA	UST TORRANCE	City of Torrance Underground Storage Tank	City of Torrance Fire Department	01/04/2018	01/05/2018	01/18/2018
CA	CUPA MADERA	CUPA Facility List	Madera County Environmental Health	02/21/2018	02/22/2018	04/03/2018
CA	UST MARIN	Underground Storage Tank Sites	Public Works Department Waste Management	03/30/2018	04/06/2018	05/04/2018
CA	CUPA MERCED	CUPA Facility List	Merced County Environmental Health	01/11/2018	01/12/2018	02/08/2018
CA	CUPA MONO	CUPA Facility List	Mono County Health Department	02/22/2018	02/27/2018	03/14/2018
CA	CUPA MONTEREY	CUPA Facility Listing	Monterey County Health Department	03/27/2018	03/29/2018	04/16/2018
CA	LUST NAPA	Sites With Reported Contamination	Napa County Department of Environmental Manag	01/09/2017	01/11/2017	03/02/2017
CA	UST NAPA	Closed and Operating Underground Storage Tank Sites	Napa County Department of Environmental Manag	02/22/2018	02/27/2018	03/29/2018
CA	CUPA NEVADA	CUPA Facility List	Community Development Agency	04/24/2018	05/01/2018	06/15/2018
CA	IND_SITE ORANGE	List of Industrial Site Cleanups	Health Care Agency	04/02/2018	05/11/2018	06/22/2018
CA	LUST ORANGE	List of Underground Storage Tank Cleanups	Health Care Agency	04/02/2018	05/11/2018	06/25/2018
CA	UST ORANGE	List of Underground Storage Tank Facilities	Health Care Agency	01/02/2018	02/07/2018	03/28/2018
CA	MS PLACER	Master List of Facilities	Placer County Health and Human Services	03/15/2018	03/19/2018	05/04/2018
CA	CUPA PLUMAS	CUPA Facility List	Plumas County Environmental Health	01/22/2018	01/24/2018	03/15/2018
CA	LUST RIVERSIDE	Listing of Underground Tank Cleanup Sites	Department of Environmental Health	04/05/2018	04/10/2018	05/04/2018
CA	UST RIVERSIDE	Underground Storage Tank Tank List	Department of Environmental Health	04/05/2018	04/10/2018	05/04/2018
CA	CS SACRAMENTO	Toxic Site Clean-Up List	Sacramento County Environmental Management	02/02/2018	04/04/2018	06/14/2018
CA	ML SACRAMENTO	Master Hazardous Materials Facility List	Sacramento County Environmental Management	02/02/2018	04/04/2018	06/19/2018
CA	CUPA SAN BENITO	CUPA Facility List	San Benito County Environmental Health	11/01/2017	11/03/2017	11/17/2017
CA	PERMITS SAN BERNARDINO	Hazardous Material Permits	San Bernardino County Fire Department Hazardo	04/09/2018	04/11/2018	06/19/2018

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

St	Acronym	Full Name	Government Agency	Gov Date	Arvl. Date	Active Date
CA	HMMD SAN DIEGO	Hazardous Materials Management Division Database	Hazardous Materials Management Division	03/05/2018	03/07/2018	04/16/2018
CA	LF SAN DIEGO	Solid Waste Facilities	Department of Health Services	04/18/2018	04/24/2018	06/19/2018
CA	SAN DIEGO CO LOP	Local Oversight Program Listing	Department of Environmental Health	04/18/2018	04/23/2018	05/04/2018
CA	SAN DIEGO CO. SAM	Environmental Case Listing	San Diego County Department of Environmental	03/23/2010	06/15/2010	07/09/2010
CA	LUST SAN FRANCISCO	Local Oversite Facilities	Department Of Public Health San Francisco Cou	09/19/2008	09/19/2008	09/29/2008
CA	UST SAN FRANCISCO	Underground Storage Tank Information	Department of Public Health	11/02/2017	11/07/2017	12/19/2017
CA	UST SAN JOAQUIN	San Joaquin Co. UST	Environmental Health Department	03/20/2018	03/22/2018	05/04/2018
CA	CUPA SAN LUIS OBISPO	CUPA Facility List	San Luis Obispo County Public Health Departme	11/16/2017	11/17/2017	12/18/2017
CA	BI SAN MATEO	Business Inventory	San Mateo County Environmental Health Service	03/14/2018	03/20/2018	05/04/2018
CA	LUST SAN MATEO	Fuel Leak List	San Mateo County Environmental Health Service	03/15/2018	03/20/2018	05/04/2018
CA	CUPA SANTA BARBARA	CUPA Facility Listing	Santa Barbara County Public Health Department	09/08/2011	09/09/2011	10/07/2011
CA	CUPA SANTA CLARA	Cupa Facility List	Department of Environmental Health	02/20/2018	02/20/2018	03/19/2018
CA	HIST LUST SANTA CLARA	HIST LUST - Fuel Leak Site Activity Report	Santa Clara Valley Water District	03/29/2005	03/30/2005	04/21/2005
CA	LUST SANTA CLARA	LOP Listing	Department of Environmental Health	03/03/2014	03/05/2014	03/18/2014
CA	SAN JOSE HAZMAT	Hazardous Material Facilities	City of San Jose Fire Department	02/04/2018	02/06/2018	03/20/2018
CA	CUPA SANTA CRUZ	CUPA Facility List	Santa Cruz County Environmental Health	01/21/2017	02/22/2017	05/23/2017
CA	CUPA SHASTA	CUPA Facility List	Shasta County Department of Resource Manageme	06/15/2017	06/19/2017	08/09/2017
CA	LUST SOLANO	Leaking Underground Storage Tanks	Solano County Department of Environmental Man	03/08/2018	03/13/2018	05/04/2018
CA	UST SOLANO	Underground Storage Tanks	Solano County Department of Environmental Man	03/08/2018	03/13/2018	03/29/2018
CA	CUPA SONOMA	Cupa Facility List	County of Sonoma Fire & Emergency Services De	03/01/2018	03/27/2018	04/16/2018
CA	LUST SONOMA	Leaking Underground Storage Tank Sites	Department of Health Services	04/03/2018	04/06/2018	05/09/2018
CA	CUPA STANISLAUS	CUPA Facility List	Stanislaus County Department of Ennvironmenta	05/08/2018	05/11/2018	06/15/2018
CA	UST SUTTER	Underground Storage Tanks	Sutter County Department of Agriculture	01/08/2018	03/01/2018	03/30/2018
CA	CUPA TEHAMA	CUPA Facility List	Tehama County Department of Environmental Hea	01/26/2018	02/02/2018	03/21/2018
CA	CUPA TRINITY	CUPA Facility List	Department of Toxic Substances Control	04/23/2018	04/25/2018	06/15/2018
CA	CUPA TULARE	CUPA Facility List	Tulare County Environmental Health Services D	03/19/2018	03/22/2018	04/17/2018
CA	CUPA TUOLUMNE	CUPA Facility List	Divison of Environmental Health	04/23/2018	04/25/2018	06/25/2018
CA	BWT VENTURA	Business Plan, Hazardous Waste Producers, and Operating Unde	Ventura County Environmental Health Division	03/26/2018	04/25/2018	06/22/2018
CA	LF VENTURA	Inventory of Illegal Abandoned and Inactive Sites	Environmental Health Division	12/01/2011	12/01/2011	01/19/2012
CA	LUST VENTURA	Listing of Underground Tank Cleanup Sites	Environmental Health Division	05/29/2008	06/24/2008	07/31/2008
CA	MED WASTE VENTURA	Medical Waste Program List	Ventura County Resource Management Agency	03/26/2018	04/25/2018	06/25/2018
CA	UST VENTURA	Underground Tank Closed Sites List	Environmental Health Division	02/28/2018	03/14/2018	03/30/2018
CA	UST YOLO	Underground Storage Tank Comprehensive Facility Report	Yolo County Department of Health	03/27/2018	04/03/2018	05/04/2018
CA	CUPA YUBA	CUPA Facility List	Yuba County Environmental Health Department	05/10/2018	05/15/2018	06/15/2018

STREET AND ADDRESS INFORMATION

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APPENDIX F

Geotechnical Investigation

GEOTECHNICAL INVESTIGATION
PROPOSED WAREHOUSE

13131 Los Angeles Street
Irwindale, California
for
Duke Realty

SOUTHERN
CALIFORNIA
GEOTECHNICAL
A California Corporation

November 19, 2018

Duke Realty
200 Spectrum Center Drive, Suite 1600
Irvine, California 92618

Attention: Mr. Michael Weber
Assistant Development Services Manager

Project No.: **18M192-1**

Subject: **Geotechnical Investigation**
Proposed Warehouse
13131 Los Angeles Street
Irwindale, California

Gentlemen:

In accordance with your request, we have performed a geotechnical investigation at the subject site. We are pleased to present this report summarizing the conclusions and recommendations developed from our investigation.

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

Daniel W. Nielsen, RCE 77915
Senior Engineer

Robert G. Trazo, GE 2655
Principal Engineer

Distribution: (1) Addressee

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1.0 EXECUTIVE SUMMARY

Presented below is a brief summary of the conclusions and recommendations of this investigation. Since this summary is not all inclusive, it should be read in complete context with the entire report.

Site Preparation

- Demolition of the existing structures and pavements will be necessary in order to facilitate the construction of the proposed development. Demolition should include all foundations, floor slabs, utilities and any other subsurface improvements that will not remain in place with the new development. Debris resultant from demolition should be disposed of offsite. Alternatively, concrete and asphalt debris may be pulverized to a maximum 2 inch particle size, well mixed with the on-site soils, and incorporated into new structural fills or it may be crushed and made into CMB, if desired.
- Initial site stripping should include the removal of any surficial vegetation. Based on conditions encountered at the time of the subsurface exploration, stripping of a few trees and some vegetation will be necessary along the perimeter of the site. Site stripping should remove any tree root masses in their entirety. These materials should be disposed of offsite.
- The near surface soils encountered at the boring and trench locations generally comprise dense to very dense native alluvial soils consisting of well graded sands and sandy gravels with significant cobble and boulder content.
- Remedial grading is recommended within the proposed building area, in order to provide uniform support conditions for the new foundations and the floor slab of the proposed structure and to remove any soils disturbed during demolition. We recommend that the proposed building pad area be overexcavated to a depth of at least 3 feet below existing grade and to a depth of at least 3 feet below proposed pad grade. The overexcavation should also extend to a sufficient depth to remove all of the artificial fill materials within the building pad area. Overexcavation within the foundation areas is recommended to extend to a depth of at least 2 feet below proposed foundation bearing grade.
- As discussed above, the native alluvial soils possess significant amounts of oversized materials, including cobbles and boulders. Where grading will require excavation into these materials, consideration should be given to using selective grading techniques to remove the cobbles and/or boulders from these soils prior to reuse as fill. Recommendations regarding selective grading and handling of oversized materials are provided in Section 6.3 and Appendix D of this report.
- After overexcavation has been completed, the resulting subgrade soils should be evaluated by the geotechnical engineer to identify any additional soils that should be overexcavated. The resulting soils should be scarified and thoroughly flooded to achieve a moisture content of 0 to 4 percent above optimum moisture, to a depth of at least 24 inches. The overexcavation subgrade soils should then be recompacted under the observation of the geotechnical engineer. The previously excavated soils may then be replaced as structural fill, compacted to 90 percent of the ASTM D-1557 maximum dry density.
- The new parking area subgrade soils are recommended to be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density.

Building Foundations

- Spread footing foundations, supported in newly placed structural fill soils.
- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.
- Reinforcement consisting of at least two (2) No. 5 rebars (1 top and 1 bottom) in strip footings. Additional reinforcement may be necessary for structural considerations.

Building Floor Slabs

- Conventional Slab-on-Grade, at least 6 inches thick.
- Modulus of Subgrade Reaction: k = 200 psi/in.
- Reinforcement is not expected to be necessary for geotechnical considerations.
- The actual thickness and reinforcement of the floor slabs should be determined by the structural engineer.

Pavements

ASPHALT PAVEMENTS (R = 60)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	3	3	3	3	4
Compacted Subgrade	12	12	12	12	12

PORTLAND CEMENT CONCRETE PAVEMENTS				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 5.0 & 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6	7	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

2.0 SCOPE OF SERVICES

The scope of services performed for this project was in accordance with our Proposal No. 18P442, dated November 2, 2018. The scope of services included a visual site reconnaissance, subsurface exploration, field and laboratory testing, and geotechnical engineering analysis to provide criteria for preparing the design of the building foundations, building floor slab, and parking lot pavements along with site preparation recommendations and construction considerations for the proposed development. The evaluation of the environmental aspects of this site was beyond the scope of services for this geotechnical investigation.

3.0 SITE AND PROJECT DESCRIPTION

3.1 Site Conditions

The subject site is located on the north side of Los Angeles Street, at the street address of 13131 Los Angeles Street in Irwindale, California. The site is bounded to the north by Rivergrade Road, to the east and west by commercial/industrial developments, and to the south by Los Angeles Street. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 in Appendix A of this report.

The site is an irregular-shaped parcel, approximately 24.9 acres in size. The site was previously operated by Hanson Structural Precast, which is no longer operational. The site is developed with two (2) industrial buildings, which possess footprint areas of 3,800 and 9,768± ft² in size, located in the southern area of the site. One of the buildings, in the southwestern area of the site is a two-story structure of brick and mortar construction. The second building, located in the south-central area of the site, is of concrete tilt-up construction with two (2) external canopy structures located on the north and east sides of the building. All of these structures are assumed to be supported on conventional shallow foundations and we assume that the buildings possess concrete slab-on-grade floors.

Temporary structures, including three office trailers, are present in the southwestern area of the site, and several small wooden shacks are also present in various locations throughout the site.

Cranes on rails, hoppers, conveyors, and various other manufacturing equipment are present in the central area of the site. A below grade hopper, approximately 15 feet deep, is located in the central area of the site.

The ground surface cover throughout the majority of the site generally consists of crushed aggregate base. Ground surface cover surrounding the buildings in the southern area of the site consists of asphaltic concrete pavements. The pavements are in poor condition with areas of moderate to severe cracking throughout. Portland cement concrete (PCC) casting beds and slabs are also present throughout the site. Ground surface cover in the remainder of the site consists of sparse native grass and weed growth along the property lines and in the northeastern corner of the site. There are a several trees located near the existing buildings, along the eastern property line, and in the north-central area of the site.

Topographic information for the site was obtained from an ALTA survey provided by Thienes Engineering. This survey provides limited topographic information using spot elevations, which are mostly concentrated along the property lines. Based on this survey information, the site topography ranges in elevations from 363± feet mean sea level (msl) in the northern area of the site to a minimum elevation of 343± feet msl in along the southern property line. The site topography appears to slope gently downward toward the south at a gradient of approximately 1± percent.

3.2 Proposed Development

Based on the site plan prepared by RGA, the site will be developed with one (1) new warehouse. The warehouse will be 528,710± ft^2 in size located in the south-central area of the site. Loading docks will be constructed along the north and western sides of the building. The building will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, and Portland cement concrete pavements in the loading dock and truck traffic areas. Areas of landscaped planters and concrete flatwork are also expected throughout the site. All of the existing buildings and manufacturing equipment will be demolished to facilitate the new construction.

Detailed structural information is not currently available. It is assumed that the new building will be of concrete tilt-up construction, typically supported on conventional shallow foundation systems, with a slab-on-grade floor. Based on the assumed construction, maximum column and wall loads are expected to be on the order of 80 to 100 kips and 3 to 7 kips per linear foot, respectively.

Based on the assumed topography, we expect that cuts and fills up to 4 to 5± feet are expected to be necessary to achieve the proposed site grades. No significant amounts of below grade construction, such as basements or crawl spaces, are expected to be included in the proposed development.

4.0 SUBSURFACE EXPLORATION

4.1 Scope of Exploration/Sampling Methods

The subsurface exploration conducted for this project consisted of three (3) borings advanced to a depth of 50± feet below existing site grades. In addition, a total of fifteen (15) trenches were excavated at the site to depths of 5 to 10± feet below existing site grades. In addition to the borings and trenches, the existing concrete slabs were cored in eight (8) different locations in order to determine the thickness of the existing slab section. All of the borings and trenches were logged during drilling and excavation by a member of our staff. The field investigation was performed on April 30 2018, as indicated in the boring and trench logs included in Appendix B of this report.

The borings were advanced with large truck mounted Becker Hammer drilling rig. The trenches were excavated using a rubber tire backhoe with a 36-inch-wide bucket. Representative bulk and soil samples were taken during drilling and excavation. Standard Penetration Test (SPT)samples were taken using a 1.4± inch inside diameter split spoon sampler, in general accordance with ASTM D-1586. This sampler was driven into the ground with successive blows of a 140-pound weight falling 30 inches. The blow counts obtained during driving are recorded for further analysis. Bulk samples were collected in plastic bags to retain their original moisture content.

The approximate locations of the borings and trenches are indicated on the Exploration Location Plan, included as Plate 2 in Appendix A of this report. The Boring and Trench Logs, which illustrate the conditions encountered at the boring and trench locations, as well as the results of some of the laboratory testing, are included in Appendix B.

4.2 Geotechnical Conditions

Pavements and Ground Surface Cover

Asphaltic concrete pavements were encountered at the ground surface at Trench No. T-1. At this location, the pavement section consists of 2± inches of asphaltic concrete with no discernable layer of aggregate base.

Boring No. B-1 encountered a surficial layer of pea gravel at the ground surface approximately 1 inch thick, underlain by 6± inches of crushed aggregate base.

Boring Nos. B-2 and B-3 and all of the Trenches, except Trench No. T-1 and T-8, were drilled/excavated in areas covered with a layer of aggregate base. The base materials encountered at the boring and trench locations possesses very high strengths and appears to consist of cement treated base. At these locations, the base layer measures 8 to 18± inches thick.

Alluvium

Native alluvial soils were encountered at the ground surface at Trench No. T-8, and beneath the pavement or aggregate base at all of the boring and trench locations, extending to the maximum depth explored of 50± feet. The alluvium generally consists of dense to very dense gravelly fine to coarse sands and fine to coarse sandy gravels and fine to medium sands with occasional to extensive cobbles and occasional boulders. Boring No. B-2 encountered a layer of silty fine sand with trace amounts of medium to coarse sands at depths of 27 to 29½± feet below existing site grades.

Groundwater

Free water was not encountered during excavation of any of the trenches or drilling of the borings. Based on the lack of any water within the trenches or borings, and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration.

As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. The primary reference used to determine the historic groundwater depths in this area is CGS Open File Report 98-13, the Seismic Hazard Evaluation of the Baldwin Park Quadrangle which indicates that the historic high groundwater level for the site is 35 feet below the ground surface.

5.0 LABORATORY TESTING

The soil samples recovered from the subsurface exploration were returned to our laboratory for further testing to determine selected physical and engineering properties of the soils. The tests are briefly discussed below. It should be noted that the test results are specific to the actual samples tested, and variations could be expected at other locations and depths.

Classification

All recovered soil samples were classified using the Unified Soil Classification System (USCS), in accordance with ASTM D-2488. Field identifications were then supplemented with additional visual classifications and/or by laboratory testing. The USCS classifications are shown on the Trench Logs and are periodically referenced throughout this report.

Moisture Content

The moisture content has been determined for selected representative samples. The moisture contents are determined in accordance with ASTM D-2216, and are expressed as a percentage of the dry weight. These test results are presented on the Boring and Trench Logs.

Maximum Dry Density and Optimum Moisture Content

Representative bulk samples have been tested for their maximum dry densities and optimum moisture contents. The results have been obtained using the Modified Proctor procedure, per ASTM D-1557 and are presented on Plates C-1 and C-2 in Appendix C of this report. These tests are generally used to compare the in-situ densities of undisturbed field samples, and for later compaction testing. Additional testing of other soil types or soil mixes may be necessary at a later date.

Soluble Sulfates

Representative samples of the near-surface soils were submitted to a subcontracted analytical laboratory for determination of soluble sulfate content. Soluble sulfates are naturally present in soils, and if the concentration is high enough, can result in degradation of concrete which comes into contact with these soils. The results of the soluble sulfate testing are presented below and are discussed further in a subsequent section of this report.

Sample Identification	Soluble Sulfates (%)	Severity
B-1 @ 0 to 5 feet	0.004	Not Applicable (S0)
B-3 @ 0 to 5 feet	0.006	Not Applicable (S0)

Corrosivity Testing

Representative bulk samples of the near-surface soils were submitted to a subcontracted analytical laboratory for determination of electrical resistivity, pH, and chloride concentrations.

The resistivity of the soils is a measure of their potential to attack buried metal improvements such as utility lines. The results of the resistivity and pH testing are presented below:

Sample Identification	**Resistivity** (ohm-cm)	**pH**	**Chlorides** (mg/kg)
B-1 @ 0 to 5 feet	6,000	8.3	16
B-3 @ 0 to 5 feet	6,800	8.1	12

Direct Shear

Direct shear testing was performed on one selected soil sample to determine its shear strength parameters. This test was performed in accordance with ASTM D-3080. The testing apparatus is designed to accept either natural or remolded samples in a one-inch high ring, approximately 2.416 inches in diameter. Three samples of the same soil are prepared by remolding them to 90± percent compaction and near optimum moisture. Each of the three samples are then loaded with different normal loads and the resulting shear strength is determined for that particular normal load. The shearing of the samples is performed at a rate slow enough to permit the dissipation of excess pore water pressure. Porous stones are in contact with the top and bottom of the sample to permit the addition or release of pore water. The results of the direct shear tests are presented on Plate C-3.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the results of our review, field exploration, laboratory testing and geotechnical analysis, the proposed development is considered feasible from a geotechnical standpoint. The recommendations contained in this report should be taken into the design, construction, and grading considerations.

The recommendations are contingent upon all grading and foundation construction activities being monitored by the geotechnical engineer of record. The recommendations are provided with the assumption that an adequate program of client consultation, construction monitoring, and testing will be performed during the final design and construction phases to verify compliance with these recommendations. Maintaining Southern California Geotechnical, Inc., (SCG) as the geotechnical consultant from the beginning to the end of the project will provide continuity of services. The geotechnical engineering firm providing testing and observation services shall assume the responsibility of Geotechnical Engineer of Record.

The Grading Guide Specifications, included as Appendix D, should be considered part of this report, and should be incorporated into the project specifications. The contractor and/or owner of the development should bring to the attention of the geotechnical engineer any conditions that differ from those stated in this report, or which may be detrimental for the development.

6.1 Seismic Design Considerations

The subject site is located in an area which is subject to strong ground motions due to earthquakes. The performance of a site specific seismic hazards analysis was beyond the scope of this investigation. However, numerous faults capable of producing significant ground motions are located near the subject site. Due to economic considerations, it is not generally considered reasonable to design a structure that is not susceptible to earthquake damage. Therefore, significant damage to structures may be unavoidable during large earthquakes. The proposed structure should, however, be designed to resist structural collapse and thereby provide reasonable protection from serious injury, catastrophic property damage and loss of life.

Faulting and Seismicity

Research of available maps indicates that the subject site is not located within an Alquist-Priolo Earthquake Fault Zone. Furthermore, SCG did not identify any evidence of faulting during the geotechnical investigation. Therefore, the possibility of significant fault rupture on the site is considered to be low.

Seismic Design Parameters

The 2016 California Building Code (CBC) was adopted by all municipalities within Southern California on January 1, 2017. The CBC provides procedures for earthquake resistant structural design that include considerations for on-site soil conditions, occupancy, and the configuration of the structure including the structural system and height. The seismic design parameters

presented below are based on the soil profile and the proximity of known faults with respect to the subject site.

The 2016 CBC Seismic Design Parameters have been generated using U.S. Seismic Design Maps, a web-based software application developed by the United States Geological Survey. This software application, available at the USGS web site, calculates seismic design parameters in accordance with the 2016 CBC, utilizing a database of deterministic site accelerations at 0.01 degree intervals. The table below is a compilation of the data provided by the USGS application. A copy of the output generated from this program is included in Appendix E of this report. A copy of the Design Response Spectrum, as generated by the USGS application is also included in Appendix E. Based on this output, the following parameters may be utilized for the subject site:

2016 CBC SEISMIC DESIGN PARAMETERS

Parameter		Value
Mapped Spectral Acceleration at 0.2 sec Period	S_S	2.239
Mapped Spectral Acceleration at 1.0 sec Period	S_1	0.745
Site Class	---	D
Site Modified Spectral Acceleration at 0.2 sec Period	S_{MS}	2.239
Site Modified Spectral Acceleration at 1.0 sec Period	S_{M1}	1.118
Design Spectral Acceleration at 0.2 sec Period	S_{DS}	1.493
Design Spectral Acceleration at 1.0 sec Period	S_{D1}	0.745

Ground Motion Parameters

For the liquefaction evaluation, we utilized a site acceleration consistent with maximum considered earthquake ground motions, as required by the 2016 CBC. The peak ground acceleration (PGA) was determined in accordance with Section 11.8.3 of ASCE 7-10. The parameter PGA_M is the maximum considered earthquake geometric mean (MCE_G) PGA, multiplied by the appropriate site coefficient from Table 11.8-1 of ASCE 7-10. The web-based software application U.S. Seismic Design Maps (described in the previous section) was used to determine PGA_M, which is 0.787g. A portion of the program output is included as Plate E-2 of this report. An associated earthquake magnitude was obtained from the USGS Unified Hazard Tool, Interactive Deaggregation application available on the USGS website. The deaggregated modal magnitude is 7.71, based on the peak ground acceleration and soil classification D.

Liquefaction

Research of the Seismic Hazards Zones Map for the Baldwin Park Quadrangle, published by the California Geological Survey (CGS) indicates that the site subject site is located within a liquefaction hazard zone. Based on this mapping, the scope of this investigation included a detailed liquefaction evaluation in order to determine the site-specific liquefaction potential.

Liquefaction is the loss of strength in generally cohesionless, saturated soils when the pore-water pressure induced in the soil by a seismic event becomes equal to or exceeds the overburden pressure. The primary factors which influence the potential for liquefaction include groundwater table elevation, soil type and plasticity characteristics, relative density of the soil, initial confining pressure, and intensity and duration of ground shaking. The depth within which the occurrence of liquefaction may impact surface improvements is generally identified as the upper 50 feet below the existing ground surface. Liquefaction potential is greater in saturated, loose, poorly graded fine sands with a mean (d_{50}) grain size in the range of 0.075 to 0.2 mm (Seed and Idriss, 1971). Non-sensitive clayey (cohesive) soils which possess a plasticity index of at least 18 (Bray and Sancio, 2006) are generally not considered to be susceptible to liquefaction, nor are those soils which are above the historic static groundwater table.

The liquefaction analysis was conducted in accordance with the requirements of Special Publication 117A (CDMG, 2008), and currently accepted practice (SCEC, 1997). The liquefaction potential of the subject site was evaluated using the empirical method developed by Boulanger and Idriss (Boulanger and Idriss, 2008). This method predicts the earthquake-induced liquefaction potential of the site based on a given design earthquake magnitude and peak ground acceleration at the subject site. This procedure essentially compares the cyclic resistance ratio (CRR) [the cyclic stress ratio required to induce liquefaction for a cohesionless soil stratum at a given depth] with the earthquake-induced cyclic stress ratio (CSR) at that depth from a specified design earthquake (defined by a peak ground surface acceleration and an associated earthquake moment magnitude). CRR is determined as a function of the corrected SPT N-value $(N_1)_{60\text{-}cs}$, adjusted for fines content. The factor of safety against liquefaction is defined as CRR/CSR. Based on Special Publication 117A, a factor of safety of at least 1.3 is required in order to demonstrate that a given soil stratum is non-liquefiable. Additionally, in accordance with Special Publication 117A, clayey soils which do not meet the criteria for liquefiable soils defined by Bray and Sancio (2006), loose soils with a plasticity index (PI) less than 12 and moisture content greater than 85% of the liquid limit, are considered to be insusceptible to liquefaction. Non-sensitive soils with a PI greater than 18 are also considered non-liquefiable.

The liquefaction analysis procedure is tabulated on the spreadsheet forms included in Appendix F of this report. The liquefaction analysis was performed for Boring No. B-1, which was advanced to a depth of 50± feet. The liquefaction potential was analyzed at the boring location utilizing a PGA_M of 0.787g related to a 7.74 magnitude seismic event. The liquefaction evaluation was performed using the reported historic high groundwater depth of 35 feet.

If liquefiable soils are identified, the potential settlements that could occur as a result of liquefaction are determined using the equation for volumetric strain due to post-cyclic reconsolidation (Yoshimine et. al, 2006). This procedure uses an empirical relationship between the induced cyclic shear strain and the corrected N-value to determine the expected volumetric strain of saturated sands subjected to earthquake shaking. This analysis is also documented on the spreadsheets included in Appendix F.

Conclusions and Recommendations

The liquefaction evaluation indicates that none of the soils below the historic high groundwater table are subject to liquefaction during the design seismic event. Based on the results of this

analysis, no design considerations related to liquefaction are considered warranted for this project.

6.2 Geotechnical Design Considerations

General

The site is generally underlain by dense to very dense well-graded sands and sandy gravels. The soils encountered at the boring and trench locations generally possess significant over-sized material including extensive cobble content and occasional boulders throughout the depths explored. Some remedial grading is considered warranted in order within the proposed building area to provide uniform support characteristics beneath the proposed slabs and foundations, and to help facilitate construction activities by removing some of the over-sized materials.

Demolition of the existing pavements and structures is also expected to cause significant disturbance to the near surface soils. Any soils disturbed during demolition should also be removed prior to the placement of structural fill soils. The excavated soils may be moisture conditioned and recompacted as structural fill.

Los Angeles County Section 111 Statement

Based on the results of our geotechnical analysis, the proposed development will be safe with regard to landslides, settlement and/or slippage. In addition, the proposed development will not adversely affect the geologic stability of the adjacent properties. This finding is in accordance with Section 111 of the Los Angeles County Building Code.

Settlement

The native alluvium is dense to very dense and possesses relatively high strengths. The near surface alluvium that will remain in-place below the recommended depth of overexcavation will not be significantly influenced by the foundation loads of the new structure. Provided that the recommended remedial grading is completed, the post construction settlements of the proposed structure are expected to be within tolerable limits.

Corrosion Potential

The results of the electrical resistivity and pH testing indicate that a sample of the on-site soils has resistivity values ranging from 6,000 to 6,800 ohm-cm, and pH values ranging from 8.1 to 8.3. These test results have been evaluated in accordance with guidelines published by the Ductile Iron Pipe Research Association (DIPRA). The DIPRA guidelines consist of a point system by which characteristics of the soils are used to quantify the corrosivity characteristics of the site. Resistivity and pH are two of the five factors that enter into the evaluation procedure. Redox potential, relative soil moisture content and sulfides are also included. Although sulfide testing was not part of the scope of services for this project, we have evaluated the corrosivity characteristics of the on-site soils using resistivity, pH and moisture content. Based on these factors, and utilizing the DIPRA procedure, the on-site soils are not considered to be corrosive to ductile iron pipe.

Therefore, polyethylene protection is expected to be required for cast iron or ductile iron pipes. It should be noted that SCG does not practice in the field of corrosion engineering, and therefore, the client may also wish to contact a corrosion engineer to provide a more thorough evaluation.

Expansion

The near-surface soils generally consist of silty fine sands and gravelly sands. These materials have been visually classified as very low to non-expansive. Therefore, no design considerations related to expansive soils are considered warranted for this site.

Soluble Sulfates

The results of the soluble sulfate testing indicate that the selected samples of the on-site soils to correspond to Class S0 with respect to the American Concrete Institute (ACI) Publication 318-14 Building Code Requirements for Structural Concrete and Commentary, Section 4.3. Therefore, specialized concrete mix designs are not considered to be necessary, with regard to sulfate protection purposes. It is, however, recommended that additional soluble sulfate testing be conducted at the completion of rough grading to verify the soluble sulfate concentrations of the soils which are present at pad grade within the building area.

Shrinkage/Subsidence

Removal and recompaction of the near surface fill soils is estimated to result in an average shrinkage of 0 to 8 percent. It should be noted that the potential shrinkage estimate is based on correlated density relationships using hammer blow counts recorded during sampling at the boring locations. If a more accurate and precise shrinkage estimate is desired, SCG can perform a shrinkage study involving several excavated test-pits where in-place densities are determined using in-situ testing methods. Please contact SCG for details and a cost estimate regarding a shrinkage study, if desired.

Minor ground subsidence is expected to occur in the soils below the zone of removal, due to settlement and machinery working. The subsidence is estimated to be 0.1± feet. This estimate may be used for grading in areas that are underlain by native alluvial soils.

These estimates are based on previous experience and the subsurface conditions encountered at the boring locations. The actual amount of subsidence is expected to be variable and will be dependent on the type of machinery used, repetitions of use, and dynamic effects, all of which are difficult to assess precisely.

Grading and Foundation Plan Review

No grading or foundation plans were available at the time of this report. It is therefore recommended that we be provided with copies of the preliminary plans, when they become available, for review with regard to the conclusions, recommendations, and assumptions contained within this report.

6.3 Site Grading Recommendations

The grading recommendations presented below are based on the subsurface conditions encountered at the boring locations and our understanding of the proposed development. We recommend that all grading activities be completed in accordance with the Grading Guide Specifications included as Appendix D of this report, unless superseded by site-specific recommendations presented below.

Site Stripping and Demolition

Demolition of the existing structures and pavements will be necessary in order to facilitate the construction of the proposed development. Demolition should include all foundations, floor slabs, equipment such as the below grade hopper and above grade cranes, utilities and any other subsurface improvements that will not remain in place with the new development. Debris resultant from demolition should be disposed of offsite. Alternatively, concrete and asphalt debris may be pulverized to a maximum 2 inch particle size, well mixed with the on-site soils, and incorporated into new structural fills or it may be crushed and made into CMB, if desired.

Initial site stripping should include removal of any surficial vegetation. Based on conditions encountered at the time of the subsurface exploration, stripping of some trees will be necessary along the perimeter of the site. Site stripping should remove any root masses in their entirety. The actual extent of site stripping should be determined in the field by the geotechnical engineer, based on the organic content and stability of the materials encountered.

Treatment of Existing Soils: Building Pad

Remedial grading should be performed within the proposed building pad area in order to remove a portion of the near-surface alluvium, and all soils disturbed during demolition. Based on conditions encountered at the trench locations, the existing soils within the proposed building area are recommended to be overexcavated to a depth of at least 3 feet below existing grade and to a depth of at least 3 feet below proposed building pad subgrade elevations, whichever is greater. Additional overexcavation should be performed within the influence zones of the new foundations, to provide for a new layer of compacted structural fill extending to a depth of at least 2 foot below proposed bearing grade.

The overexcavation areas should extend at least 5 feet beyond the building perimeter, and to an extent equal to the depth of fill below the new foundations. If the proposed structure will incorporate any exterior columns (such as for a canopy or overhang) the area of overexcavation should also encompass these areas.

Following completion of the overexcavation, the subgrade soils within the building area should be evaluated by the geotechnical engineer to verify their suitability to serve as the structural fill subgrade, as well as to support the foundation loads of the new structure. This evaluation should include proofrolling and probing to identify any soft, loose or otherwise unstable soils that must be removed. Some localized areas of deeper excavation may be required if loose, porous, or low density native soils are encountered at the base of the overexcavation.

After a suitable overexcavation subgrade has been achieved, the exposed soils should be scarified to a depth of at least 12 inches, and thoroughly flooded to raise the moisture content of the underlying soils to at least 0 to 4 percent above optimum moisture content, extending to a depth of at least 24 inches. The moisture conditioning of the overexcavation subgrade soils should be verified by the geotechnical engineer. The subgrade soils should then be recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. The previously excavated soils may then be replaced as compacted structural fill.

Treatment of Existing Soils: Parking Areas

Based on economic considerations, overexcavation of the existing soils in the new parking and drive areas is not considered warranted, with the exception of areas where lower strength, or unstable soils are identified by the geotechnical engineer during grading. Subgrade preparation in the new parking and drive areas should initially consist of removal of all soils disturbed during stripping and demolition operations.

The geotechnical engineer should then evaluate the subgrade to identify any areas of additional unsuitable soils. Any such materials should be removed to a level of firm and unyielding soil. The exposed subgrade soils should then be scarified to a depth of 12± inches, moisture conditioned to 0 to 4 percent above optimum, and recompacted to at least 90 percent of the ASTM D-1557 maximum dry density. Based on the presence of variable strength surficial soils throughout the site, it is expected that some isolated areas of additional overexcavation may be required to remove zones of lower strength, unsuitable soils.

The grading recommendations presented above for the proposed parking area assume that the owner and/or developer can tolerate minor amounts of settlement within the proposed parking areas. The grading recommendations presented above do not completely mitigate the extent of the existing fill soils in the parking areas. As such, settlement and associated pavement distress could occur. Typically, repair of such distressed areas involves significantly lower costs than completely mitigating these soils at the time of construction. If the owner cannot tolerate the risk of such settlements, the parking and drive areas should be overexcavated to a depth of 2 feet below proposed pavement subgrade elevation, with the removed soils replaced as compacted structural fill.

Treatment of Existing Soils: Retaining Walls and Site Walls

The existing soils within the areas of any proposed retaining and site walls should be overexcavated to a depth of 2 feet below foundation bearing grade and replaced as compacted structural fill as discussed above for the proposed building pad. Any undocumented fill soils within any of these foundation areas should be removed in their entirety. The overexcavation subgrade soils should be evaluated by the geotechnical engineer prior to scarifying, moisture conditioning, and recompacting the upper 12 inches of exposed subgrade soils, as discussed for the building area. The previously excavated soils may then be replaced as compacted structural fill.

Fill Placement

- Fill soils should be placed in thin (6± inches), near-horizontal lifts, moisture conditioned to 0 to 4 percent above the optimum moisture content, and compacted.

- On-site soils may be used for fill provided they are cleaned of any debris to the satisfaction of the geotechnical engineer.
- All grading and fill placement activities should be completed in accordance with the requirements of the 2016 CBC and the grading code of the city of Irwindale and county of Los Angeles.
- All fill soils should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Fill soils should be well mixed.
- Compaction tests should be performed periodically by the geotechnical engineer as random verification of compaction and moisture content. These tests are intended to aid the contractor. Since the tests are taken at discrete locations and depths, they may not be indicative of the entire fill and therefore should not relieve the contractor of his responsibility to meet the job specifications.

Selective Grading and Oversized Material Placement

The native alluvial soils possess significant cobble and/or boulder content. It is expected that large scrapers (Caterpillar 657 or equivalent) will be adequate to move the cobble containing soils as well as some of the soils containing smaller boulders. It may be necessary to move such larger boulders individually, and place them as oversized materials in accordance with the Grading Guide Specifications, in Appendix D of this report.

Since the proposed grading will require excavation of cobble and boulder containing soils, it may be desirable to selectively grade the proposed building pad area. The presence of particles greater than 3 inches in diameter within the upper 1 to 3 feet of the building pad subgrade will impact the utility and foundation excavations. Depending on the depths of fills required within the proposed parking areas, it may be feasible to sort the on-site soils, placing the materials greater than 3 inches in diameter within the lower depths of the fills, and limiting the upper 1 to 3 feet of soils to materials less than 3 inches in size. Oversized materials could also be placed within the lower depths of the recommended overexcavations. In order to achieve this grading, it would likely be necessary to use rock buckets and/or rock sieves to separate the oversized materials from the remaining soil. Although such selective grading will facilitate further construction activities, it is not considered mandatory and a suitable subgrade could be achieved without such extensive sorting. However, in any case, it is recommended that all materials greater than 6 inches in size be excluded from the upper 1 foot of the surface of any compacted fills.

The placement of any oversized materials should be performed in accordance with the Grading Guide Specifications included in Appendix D of this report. If disposal of oversized materials is required, rock blankets or windrows should be used and such areas should be observed during construction and placement by a representative of the geotechnical engineer.

Imported Structural Fill

All imported structural fill should consist of very low expansive (EI < 20), well graded soils possessing at least 10 percent fines (that portion of the sample passing the No. 200 sieve). Additional specifications for structural fill are presented in the Grading Guide Specifications, included as Appendix D.

Utility Trench Backfill

In general, all utility trench backfill should be compacted to at least 90 percent of the ASTM D-1557 maximum dry density. It is recommended that materials in excess of 6 inches in size not be used for utility trench backfill. Compacted trench backfill should conform to the requirements of the local grading code, and more restrictive requirements may be indicated by the city of Irwindale and the county of Los Angeles. All utility trench backfills should be witnessed by the geotechnical engineer. The trench backfill soils should be compaction tested where possible; probed and visually evaluated elsewhere.

Utility trenches which parallel a footing, and extending below a 1h:1v plane projected from the outside edge of the footing should be backfilled with structural fill soils, compacted to at least 90 percent of the ASTM D-1557 standard. Pea gravel backfill should not be used for these trenches.

6.4 Construction Considerations

Excavation Considerations

The near-surface soils at this site generally consist of well grades sands and sandy gravels. These materials may be subject to caving within shallow excavations. Where caving occurs within shallow excavations, flattened excavation slopes may be sufficient to provide excavation stability. Deeper excavations may require some form of external stabilization such as shoring or bracing. Maintaining adequate moisture content within the near-surface soils will improve excavation stability. Temporary excavation slopes should be no steeper than 2h:1v. All excavation activities on this site should be conducted in accordance with Cal-OSHA regulations.

Groundwater

The static groundwater table at this site is considered to exist at a depth in excess of 50± feet. Therefore, groundwater is not expected to impact grading or foundation construction activities.

6.5 Foundation Design and Construction

Based on the preceding grading recommendations, it is assumed that the new building pad will be underlain by new structural fill soils used to replace a portion of the near-surface alluvium. These structural fill soils are expected to extend to depths of at least 2 feet below proposed foundation bearing grade, underlain by 1± foot of additional soil that has been densified and moisture conditioned in place. Based on this subsurface profile, the proposed structure may be supported on conventional shallow foundations.

Foundation Design Parameters

New square and rectangular footings may be designed as follows:

- Maximum, net allowable soil bearing pressure: 2,500 lbs/ft^2.

- Minimum wall/column footing width: 14 inches/24 inches.

- Minimum longitudinal steel reinforcement within strip footings: Two (2) No. 5 rebars (1 top and 1 bottom).

- Minimum foundation embedment: 12 inches into suitable structural fill soils, and at least 18 inches below adjacent exterior grade. Interior column footings may be placed immediately beneath the floor slab.

- It is recommended that the perimeter building foundations be continuous across all exterior doorways. Any flatwork adjacent to the exterior doors should be doweled into the perimeter foundations in a manner determined by the structural engineer.

The allowable bearing pressure presented above may be increased by one-third when considering short duration wind or seismic loads. The minimum steel reinforcement recommended above is based on geotechnical considerations; additional reinforcement may be necessary for structural considerations. The actual design of the foundations should be determined by the structural engineer.

Foundation Construction

The foundation subgrade soils should be evaluated at the time of overexcavation, as discussed in Section 6.3 of this report. It is further recommended that the foundation subgrade soils be evaluated by the geotechnical engineer immediately prior to steel or concrete placement. Soils suitable for direct foundation support should consist of newly placed structural fill, compacted to at least 90 percent of the ASTM D-1557 maximum dry density. Any unsuitable materials should be removed to a depth of suitable bearing compacted structural fill, with the resulting excavations backfilled with compacted fill soils. As an alternative, lean concrete slurry (500 to 1,500 psi) may be used to backfill such isolated overexcavations.

The foundation subgrade soils should also be properly moisture conditioned to 0 to 4 percent above the Modified Proctor optimum, to a depth of at least 12 inches below bearing grade. Since it is typically not feasible to increase the moisture content of the floor slab and foundation subgrade soils once rough grading has been completed, care should be taken to maintain the moisture content of the building pad subgrade soils throughout the construction process.

Estimated Foundation Settlements

Post-construction total and differential settlements of shallow foundations designed and constructed in accordance with the previously presented recommendations are estimated to be less than 1.0 and 0.5 inches, respectively. Differential movements are expected to occur over a 30-foot span, thereby resulting in an angular distortion of less than 0.002 inches per inch.

Lateral Load Resistance

Lateral load resistance will be developed by a combination of friction acting at the base of foundations and slabs and the passive earth pressure developed by footings below grade. The following friction and passive pressure may be used to resist lateral forces:

- Passive Earth Pressure: 300 lbs/ft^3
- Friction Coefficient: 0.30

These are allowable values, and include a factor of safety. When combining friction and passive resistance, the passive pressure component should be reduced by one-third. These values assume that footings will be poured directly against compacted structural fill. The maximum allowable passive pressure is 2500 lbs/ft^2.

6.6 Floor Slab Design and Construction

Subgrades which will support new floor slabs should be prepared in accordance with the recommendations contained in the ***Site Grading Recommendations*** section of this report. Based on the anticipated grading which will occur at this site, the floors of the new buildings may be constructed as conventional slabs-on-grade supported on newly placed structural fill soils, extending to a depth of at least 3 feet below the proposed pad grade. Based on geotechnical considerations, the floor slabs may be designed as follows:

- Minimum slab thickness: 6 inches.

- Modulus of Subgrade Reaction: k = 200 psi/in

- Minimum slab reinforcement: Reinforcement is not expected to be required for geotechnical conditions. The actual floor slab reinforcement should be determined by the structural engineer, based upon the imposed loading.

- Slab underlayment: If moisture sensitive floor coverings will be used the minimum slab underlayment should consist of a moisture vapor barrier constructed below the entire area wherever such moisture sensitive floor coverings are anticipated. The moisture vapor barrier should meet or exceed the Class A rating as defined by ASTM E 1745-97 and have a permeance rating less than 0.01 perms as described in ASTM E 96-95 and ASTM E 154-88. A polyolefin material such as Stego® Wrap Vapor Barrier or equivalent will meet these specifications. The moisture vapor barrier should be properly constructed in accordance with all applicable manufacturer specifications. Given that a rock free subgrade is anticipated and that a capillary break is not required, sand below the barrier is not required. The need for sand and/or the amount of sand above the moisture vapor barrier should be specified by the structural engineer or concrete contractor. The selection of sand above the barrier is not a geotechnical engineering issue and hence outside our purview.

- Moisture condition the floor slab subgrade soils to 0 to 4 percent above the Modified Proctor optimum moisture content, to a depth of 12 inches. The moisture content of the

floor slab subgrade soils should be verified by the geotechnical engineer within 24 hours prior to concrete placement.

- Proper concrete curing techniques should be utilized to reduce the potential for slab curling or the formation of excessive shrinkage cracks.

The actual design of the floor slab should be completed by the structural engineer to verify adequate thickness and reinforcement.

6.7 Retaining Wall Design and Construction

Although not indicated on the site plan, some retaining walls may be required to facilitate the new site grades. The parameters recommended for use in the design of these walls are presented below.

Retaining Wall Design Parameters

Based on the conditions encountered at the boring and trench locations, the following parameters may be used in the design of new retaining walls for this site. We have provided parameters assuming the use of on-site soils for retaining wall backfill. The near surface soils generally consist of well graded sands and sandy gravels. Based on their classifications, the near surface soils are expected to possess a friction angle of at least 32 degrees when compacted to 90 percent of the ASTM-1557 maximum dry density.

If desired, SCG could provide design parameters for an alternative select backfill material behind the retaining walls. The use of select backfill material could result in lower lateral earth pressures. In order to use the design parameters for the imported select fill, this material must be placed within the entire active failure wedge. This wedge is defined as extending from the heel of the retaining wall upwards at an angle of approximately 60° from horizontal. If select backfill material behind the retaining wall is desired, SCG should be contacted for supplementary recommendations.

RETAINING WALL DESIGN PARAMETERS

Design Parameter		**Soil Type** On-Site Soils
Internal Friction Angle (ϕ)		32°
Unit Weight		130 lbs/ft^3
Equivalent Fluid Pressure:	Active Condition (level backfill)	40 lbs/ft^3
	Active Condition (2h:1v backfill)	61 lbs/ft^3
	At-Rest Condition (level backfill)	61 lbs/ft^3

The walls should be designed using a soil-footing coefficient of friction of 0.30 and an equivalent passive pressure of 300 lbs/ft^3. The structural engineer should incorporate appropriate factors of safety in the design of the retaining walls.

The active earth pressure may be used for the design of retaining walls that do not directly support structures or support soils that in turn support structures and which will be allowed to deflect. The at-rest earth pressure should be used for walls that will not be allowed to deflect such as those which will support foundation bearing soils, or which will support foundation loads directly.

Where the soils on the toe side of the retaining wall are not covered by a "hard" surface such as a structure or pavement, the upper 1 foot of soil should be neglected when calculating passive resistance due to the potential for the material to become disturbed or degraded during the life of the structure.

Seismic Lateral Earth Pressures

In accordance with the 2016 CBC, any retaining walls more than 6 feet in height must be designed for seismic lateral earth pressures. If walls 6 feet or more are required for this site, the geotechnical engineer should be contacted for supplementary seismic lateral earth pressure recommendations.

Retaining Wall Foundation Design

The retaining wall foundations should be supported within newly placed structural fill. Foundations to support new retaining walls should be designed in accordance with the general Foundation Design Parameters presented in a previous section of this report.

Backfill Material

On-site soils may be used to backfill the retaining walls. However, all backfill material placed within 3 feet of the back wall face should have a particle size no greater than 3 inches. The retaining wall backfill materials should be well graded.

It is recommended that a properly installed prefabricated drainage composite such as the MiraDRAIN 6000XL (or approved equivalent), which is specifically designed for use behind retaining walls be used. If the drainage composite material is not covered by an impermeable surface, such as a structure or pavement, a 12-inch thick layer of a low permeability soil should be placed over the backfill to reduce surface water migration to the underlying soils. The drainage composite should be separated from the backfill soils by a suitable geotextile, approved by the geotechnical engineer.

All retaining wall backfill should be placed and compacted under engineering controlled conditions in the necessary layer thicknesses to ensure an in-place density between 90 and 93 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557-91). Care should be taken to avoid over-compaction of the soils behind the retaining walls, and the use of heavy compaction equipment should be avoided.

Subsurface Drainage

As previously indicated, the retaining wall design parameters are based upon drained backfill conditions. Consequently, some form of permanent, reliable, drainage system will be necessary in conjunction with the appropriate backfill material. This drainage system should consist of a 4-inch diameter perforated pipe surrounded by 3 cubic feet of gravel per linear foot of drain placed behind the wall, above the retaining wall footing. The gravel layer should be wrapped in a suitable geotextile fabric to reduce the potential for migration of fines. The footing drain should be connected to a sump pump system.

6.8 Pavement Design Parameters

Site preparation in the pavement area should be completed as previously recommended in the ***Site Grading Recommendations*** section of this report. The subsequent pavement recommendations assume proper drainage and construction monitoring, and are based on either PCA or CALTRANS design parameters for a twenty (20) year design period. However, these designs also assume a routine pavement maintenance program to obtain the anticipated 20-year pavement service life.

Pavement Subgrades

It is anticipated that the new pavements will be primarily supported on a layer of compacted structural fill, consisting of scarified, thoroughly moisture conditioned and recompacted existing soils. The on-site soils generally consist of well graded sands and sandy gravels. Based on their classification, these materials are expected to possess good to excellent pavement support characteristics, with R-values in the range of 60 to 70. Since R-value testing was not included in the scope of services for this project, the subsequent pavement design is based upon an assumed R-value of 60. Any fill material imported to the site should have support characteristics equal to or greater than that of the on-site soils and be placed and compacted under engineering controlled conditions. It is recommended that R-value testing be performed after completion of rough grading. Depending upon the results of the R-value testing, it may be feasible to use thinner pavement sections in some areas of the site.

Asphaltic Concrete

Presented below are the recommended thicknesses for new flexible pavement structures consisting of asphaltic concrete over a granular base. The pavement designs are based on the traffic indices (TI's) indicated. The client and/or civil engineer should verify that these TI's are representative of the anticipated traffic volumes. If the client and/or civil engineer determine that the expected traffic volume will exceed the applicable traffic index, we should be contacted for supplementary recommendations. The design traffic indices equate to the following approximate daily traffic volumes over a 20 year design life, assuming six operational traffic days per week.

Traffic Index	No. of Heavy Trucks per Day
4.0	0
5.0	1
6.0	3
7.0	11
8.0	35
9.0	93

For the purpose of the traffic volumes indicated above, a truck is defined as a 5-axle tractor trailer unit with one 8-kip axle and two 32-kip tandem axles. All of the traffic indices allow for 1,000 automobiles per day.

ASPHALT PAVEMENTS (R=60)					
Materials	**Thickness (inches)**				
	Auto Parking and Auto Drive Lanes (TI = 4.0 to 5.0)	Truck Traffic			
		TI = 6.0	TI = 7.0	TI = 8.0	TI = 9.0
Asphalt Concrete	3	3½	4	5	5½
Aggregate Base	3	3	3	3	4
Compacted Subgrade	12	12	12	12	12

The aggregate base course should be compacted to at least 95 percent of the ASTM D-1557 maximum dry density. The asphaltic concrete should be compacted to at least 95 percent of the Marshall maximum density, as determined by ASTM D-2726. The aggregate base course may consist of crushed aggregate base (CAB) or crushed miscellaneous base (CMB), which is a recycled gravel, asphalt and concrete material. The gradation, R-Value, Sand Equivalent, and Percentage Wear of the CAB or CMB should comply with appropriate specifications contained in the current edition of the "Greenbook" Standard Specifications for Public Works Construction.

Portland Cement Concrete

The preparation of the subgrade soils within Portland cement concrete pavement areas should be performed as previously described for proposed asphalt pavement areas. The minimum recommended thicknesses for the Portland Cement Concrete pavement sections are as follows:

PORTLAND CEMENT CONCRETE PAVEMENTS				
Materials	**Thickness (inches)**			
	Autos and Light Truck Traffic (TI = 5.0 & 6.0)	Truck Traffic		
		TI = 7.0	TI = 8.0	TI = 9.0
PCC	5	6	7	8
Compacted Subgrade (95% minimum compaction)	12	12	12	12

The concrete should have a 28-day compressive strength of at least 3,000 psi. Reinforcing within all pavements should be designed by the structural engineer. The maximum joint spacing within all of the PCC pavements is recommended to be equal to or less than 30 times the pavement thickness. The actual joint spacing and reinforcing of the Portland cement concrete pavements should be determined by the structural engineer.

7.0 GENERAL COMMENTS

This report has been prepared as an instrument of service for use by the client, in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, civil engineer, and/or structural engineer. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur. The client(s)' reliance upon this report is subject to the Engineering Services Agreement, incorporated into our proposal for this project.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between boring locations and sample depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted.

The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

8.0 REFERENCES

California Division of Mines and Geology (CDMG), "Guidelines for Evaluating and Mitigating Seismic Hazards in California," State of California, Department of Conservation, Division of Mines and Geology, Special Publication 117A, 2008.

Idriss, I. M. and Boulanger, R. W., "Soil Liquefaction During Earthquakes", Earthquake Engineering Research Institute, 2008.

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Seed, H. B., and Idriss, I. M., "Simplified Procedure for Evaluating Soil Liquefaction Potential using field Performance Data," Journal of the Soil Mechanics and Foundations Division, American Society of Civil Engineers, September 1971, pp. 1249-1273.

Sadigh, K., Chang, C. –Y., Egan, J. A., Makdisi. F., Youngs, R. R., "*Attenuation Relationships for Shallow Crustal Earthquakes Based on California Strong Motion Data"*, Seismological Research Letters, Seismological Society of America, Volume 68, Number 1, January/ February 1997, pp. 180-189.

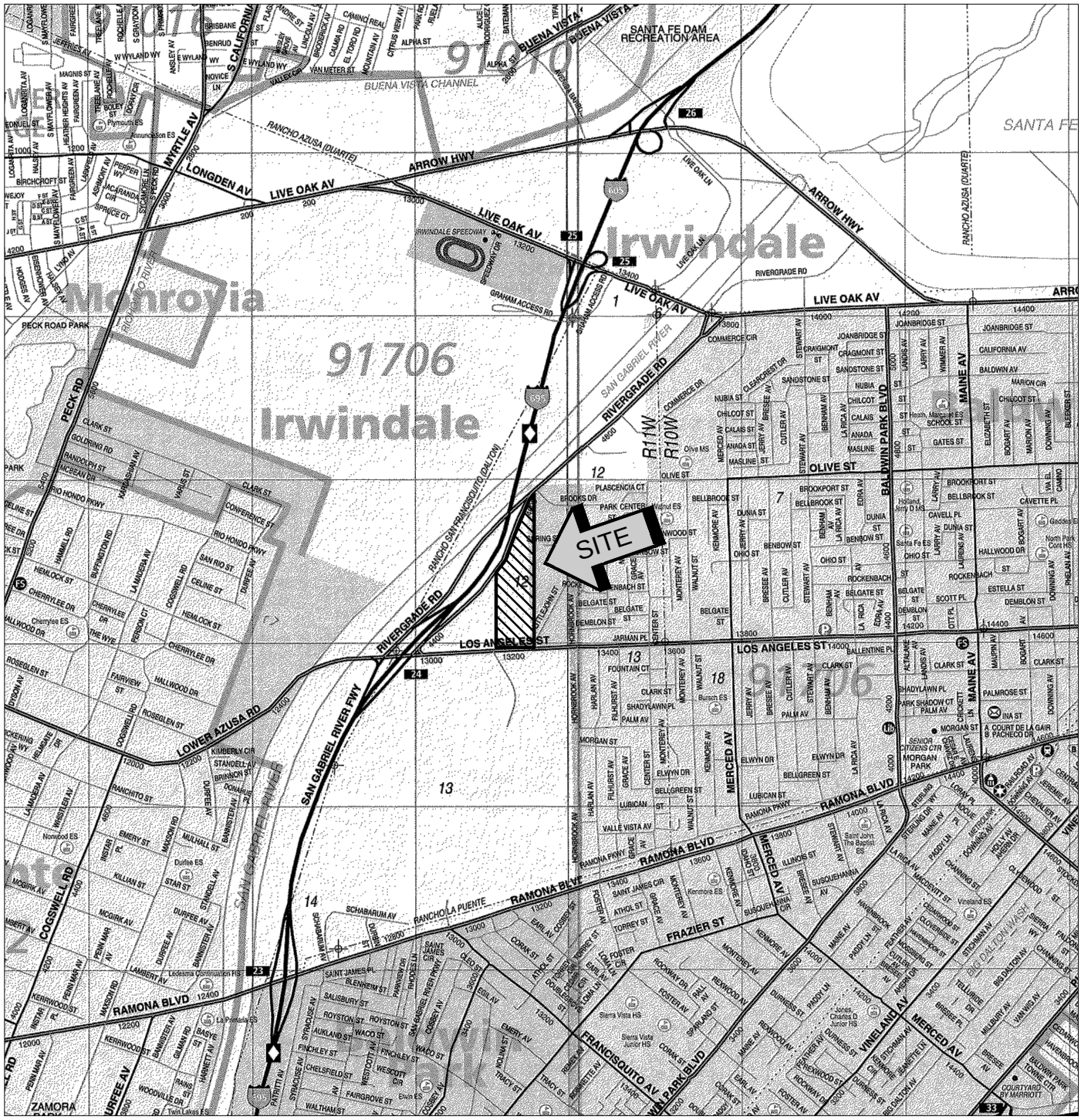
Southern California Earthquake Center (SCEC), University of Southern California, "Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California," Committee formed 1997.

Tokimatsu K., and Seed, H. B., "Evaluation of Settlements in Sands Due to Earthquake Shaking," Journal of the Geotechnical Engineering Division, American society of Civil Engineers, Volume 113, No. 8, August 1987, pp. 861-878.

Tokimatsu, K. and Yoshimi, Y., "*Empirical Correlations of Soil Liquefaction Based on SPT N-value and Fines Content,"* Seismological Research Letters, Eastern Section Seismological Society Of America, Volume 63, Number 1, p. 73.

Youd, T. L. and Idriss, I. M. (Editors), "Proceedings of the NCEER Workshop on Evaluation of Liquefaction Resistance of Soils," Salt Lake City, UT, January 5-6 1996, NCEER Technical Report NCEER-97-0022, Buffalo, NY.

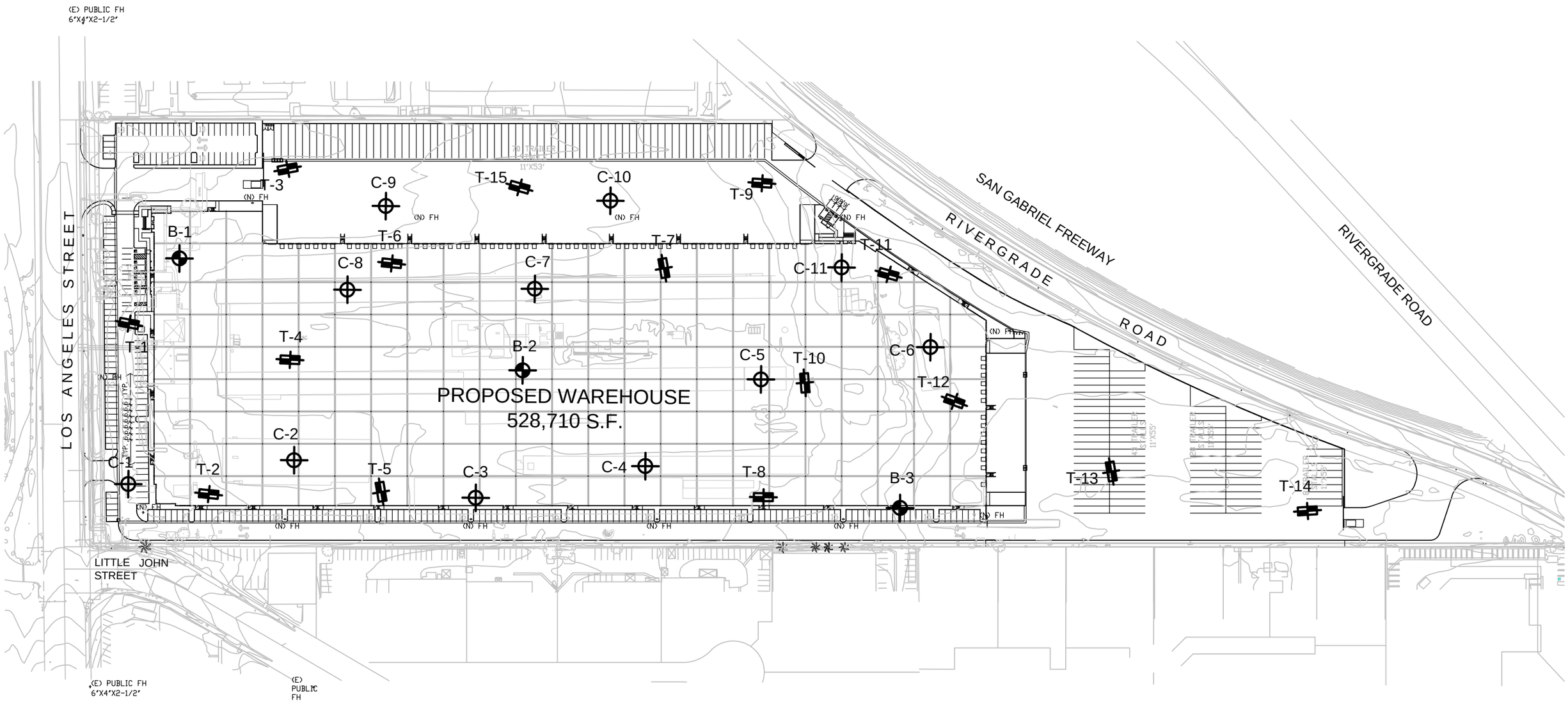
APPENDIX A



SOURCE: LOS ANGELES COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP
PROPOSED WAREHOUSE
IRWINDALE, CALIFORNIA
SCALE: 1" = 2400'
DRAWN: PML CHKD: RGT
SCG PROJECT 18M192-1
PLATE 1

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CORE LOCATION
- APPROXIMATE TRENCH LOCATION

NORTH
SoCalGeo

SITE PLAN PROVIDED BY RGA.

EXPLORATION LOCATION PLAN	
PROPOSED WAREHOUSE	
IRWINDALE, CALIFORNIA	
SCALE: 1" = 150'	SOUTHERN CALIFORNIA GEOTECHNICAL
DRAWN: PM CHKD: RGT	
SCG PROJECT 18M192-1	
PLATE 2	

APPENDIX B

BORING LOG LEGEND

SAMPLE TYPE	GRAPHICAL SYMBOL	SAMPLE DESCRIPTION
AUGER		SAMPLE COLLECTED FROM AUGER CUTTINGS, NO FIELD MEASUREMENT OF SOIL STRENGTH. (DISTURBED)
CORE		ROCK CORE SAMPLE: TYPICALLY TAKEN WITH A DIAMOND-TIPPED CORE BARREL. TYPICALLY USED ONLY IN HIGHLY CONSOLIDATED BEDROCK.
GRAB		SOIL SAMPLE TAKEN WITH NO SPECIALIZED EQUIPMENT, SUCH AS FROM A STOCKPILE OR THE GROUND SURFACE. (DISTURBED)
CS		CALIFORNIA SAMPLER: 2-1/2 INCH I.D. SPLIT BARREL SAMPLER, LINED WITH 1-INCH HIGH BRASS RINGS. DRIVEN WITH SPT HAMMER. (RELATIVELY UNDISTURBED)
NSR		NO RECOVERY: THE SAMPLING ATTEMPT DID NOT RESULT IN RECOVERY OF ANY SIGNIFICANT SOIL OR ROCK MATERIAL.
SPT		STANDARD PENETRATION TEST: SAMPLER IS A 1.4 INCH INSIDE DIAMETER SPLIT BARREL, DRIVEN 18 INCHES WITH THE SPT HAMMER. (DISTURBED)
SH		SHELBY TUBE: TAKEN WITH A THIN WALL SAMPLE TUBE, PUSHED INTO THE SOIL AND THEN EXTRACTED. (UNDISTURBED)
VANE		VANE SHEAR TEST: SOIL STRENGTH OBTAINED USING A 4 BLADED SHEAR DEVICE. TYPICALLY USED IN SOFT CLAYS-NO SAMPLE RECOVERED.

COLUMN DESCRIPTIONS

DEPTH: Distance in feet below the ground surface.

SAMPLE: Sample Type as depicted above.

BLOW COUNT: Number of blows required to advance the sampler 12 inches using a 140 lb hammer with a 30-inch drop. 50/3" indicates penetration refusal (>50 blows) at 3 inches. WH indicates that the weight of the hammer was sufficient to push the sampler 6 inches or more.

POCKET PEN.: Approximate shear strength of a cohesive soil sample as measured by pocket penetrometer.

GRAPHIC LOG: Graphic Soil Symbol as depicted on the following page.

DRY DENSITY: Dry density of an undisturbed or relatively undisturbed sample in lbs/ft^3.

MOISTURE CONTENT: Moisture content of a soil sample, expressed as a percentage of the dry weight.

LIQUID LIMIT: The moisture content above which a soil behaves as a liquid.

PLASTIC LIMIT: The moisture content above which a soil behaves as a plastic.

PASSING #200 SIEVE: The percentage of the sample finer than the #200 standard sieve.

UNCONFINED SHEAR: The shear strength of a cohesive soil sample, as measured in the unconfined state.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 18G145
PROJECT: Proposed Warehouse
LOCATION: Irwindale, California

DRILLING DATE: 4/30/18
DRILLING METHOD: Becker Hammer
LOGGED BY: Anthony Luna

WATER DEPTH: Dry
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					1± inch Gravel, 6± inches Aggregate base							
	X	40			ALLUVIUM: Light Gray fine to medium Sand, little coarse Sand, little fine Gravel, dense-dry to damp		2					
	X	52			Light Gray Gravelly fine to coarse Sand, occasional Cobbles, very dense-dry		1					
5												
	X	69			Light Gray to Gray Brown to Brown fine to coarse Sandy Gravel to Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense to very dense-dry to damp		2					
	X	36					3					
10												
	X	71					2					
15												
	X	50/5"					2					
20												
	X	63					2					
25												
	X	69/11"			@ 28½ to 30 feet, moist		8					
30												
	X	50/2"					3					

TBL 18G145.GPJ SOCALGEO.GDT 5/23/18

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-1

JOB NO.: 18G145
PROJECT: Proposed Warehouse
LOCATION: Irwindale, California

DRILLING DATE: 4/30/18
DRILLING METHOD: Becker Hammer
LOGGED BY: Anthony Luna

WATER DEPTH: Dry
CAVE DEPTH: 39 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Light Gray to Gray Brown to Brown fine to coarse Sandy Gravel to Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense to very dense-dry to damp							
	X	81					2					
40												
	X	50/4"					2					
45												
	X	50/5"					2					
50												
					Boring Terminated at 50'							

TBL 18G145.GPJ SOCALGEO.GDT 5/23/18

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 18G145
PROJECT: Proposed Warehouse
LOCATION: Irwindale, California

DRILLING DATE: 4/30/18
DRILLING METHOD: Becker Hammer
LOGGED BY: Anthony Luna

WATER DEPTH: Dry
CAVE DEPTH: 34 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					10± inches Aggregate base							
	X	50/3"			ALLUVIUM: Dark Gray Gravelly fine to coarse Sand to fine to coarse Sandy Gravel, very dense-moist		11					
	X	50/4"			Gray to Gray Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense to very dense-dry to damp		4					
5												
	X	37					2					
	X	50/4"					3					
10												
	X	50/4"					2					
15												
	X	50/4"					2					
20												
					Brown fine to medium Sand, trace coarse Sand, trace fine Gravel, trace to little Silt, dense-damp							
	X	41					5					
25												
					Dark Brown Silty fine Sand, trace medium to coarse Sand, very dense-very moist							
	X	62/11"					18					
30					Gray Brown to Brown Gravelly fine to coarse Sand, occasional Cobbles, very dense-damp		4					
					Gray Brown fine to coarse Sandy Gravely to Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, very dense-dry to damp							
	X	50/4"					3					

TBL 18G145.GPJ SOCALGEO.GDT 5/23/18

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-2

JOB NO.: 18G145
PROJECT: Proposed Warehouse
LOCATION: Irwindale, California

DRILLING DATE: 4/30/18
DRILLING METHOD: Becker Hammer
LOGGED BY: Anthony Luna

WATER DEPTH: Dry
CAVE DEPTH: 34 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Gray Brown fine to coarse Sandy Gravely to Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, very dense-dry to damp							
	X	50/3"					3					
40												
	X	50/4"					2					
45												
	X	50/3"					2					
50												
					Boring Terminated at 50'							

TBL 18G145.GPJ SOCALGEO.GDT 5/23/18

TEST BORING LOG

PLATE B-2b

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 18G145
PROJECT: Proposed Warehouse
LOCATION: Irwindale, California

DRILLING DATE: 4/30/18
DRILLING METHOD: Becker Hammer
LOGGED BY: Anthony Luna

WATER DEPTH: Dry
CAVE DEPTH: 15 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION SURFACE ELEVATION: --- MSL	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					8± inches Aggregate base							
	X	69			ALLUVIUM: Gray Brown Gravelly fine to coarse Sand, very dense-dry to damp		2					
	X	31			Light Gray Brown Gravelly fine to coarse Sand to fine to coarse Sandy Gravel, extensive Cobbles, occasional Boulders, dense to very dense-dry to damp		1					
5												
	X	50/6"					1					
	X	51					1					
10												
	X	50/5"					1					
15												
	X	50/4"					1					
20												
	X	50/5"					1					
25												
	X	50/3"					1					
30												
	X	50/2"					4					

TBL 18G145.GPJ SOCALGEO.GDT 5/23/18

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

BORING NO. B-3

JOB NO.: 18G145
PROJECT: Proposed Warehouse
LOCATION: Irwindale, California

DRILLING DATE: 4/30/18
DRILLING METHOD: Becker Hammer
LOGGED BY: Anthony Luna

WATER DEPTH: Dry
CAVE DEPTH: 15 feet
READING TAKEN: At Completion

FIELD RESULTS						LABORATORY RESULTS						
DEPTH (FEET)	SAMPLE	BLOW COUNT	POCKET PEN. (TSF)	GRAPHIC LOG	DESCRIPTION (Continued)	DRY DENSITY (PCF)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTIC LIMIT	PASSING #200 SIEVE (%)	ORGANIC CONTENT (%)	COMMENTS
					Light Gray Brown Gravelly fine to coarse Sand to fine to coarse Sandy Gravel, extensive Cobbles, occasional Boulders, dense to very dense-dry to damp							
	X	50/5"			@ 38½ to 40 feet, damp to moist		7					
40												
	X	50/5"					4					
45												
	X	50/5"			@ 48½ to 50 feet, moist		3					
50												
					Boring Terminated at 50'							

TBL 18G145.GPJ SOCALGEO.GDT 5/23/18

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-1

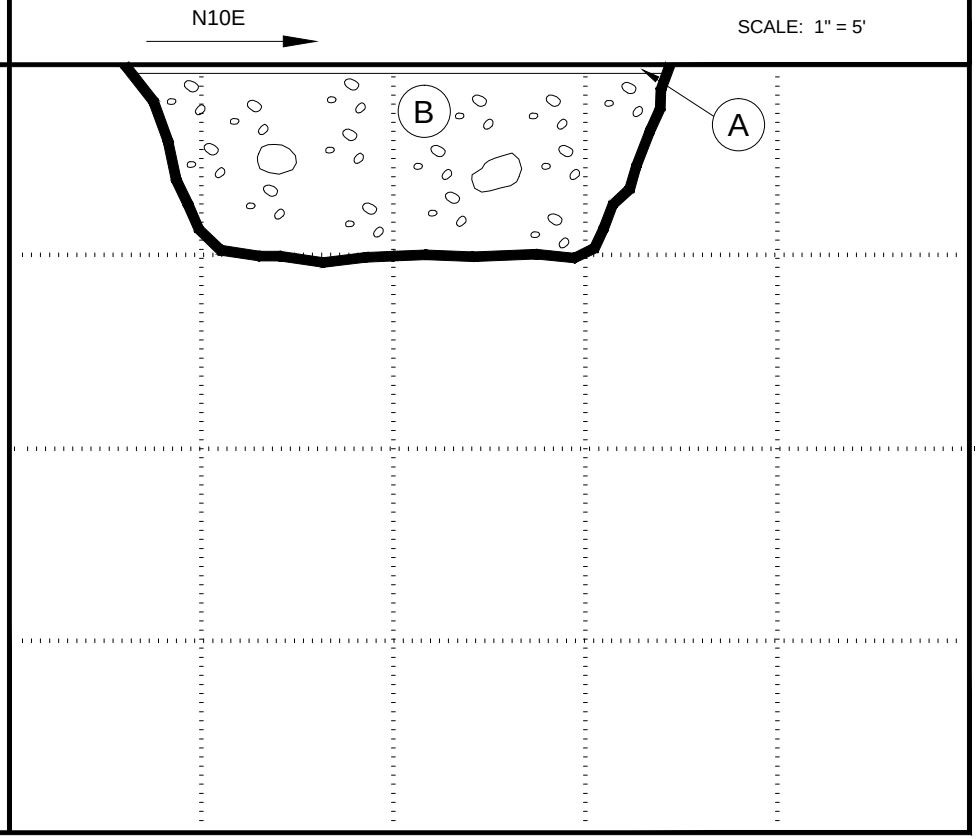
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N10E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		2	A: ASPHALTIC CONCRETE (AC): 2 inches thick B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
5	b		2	Trench Terminated @ 5 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-4

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-2

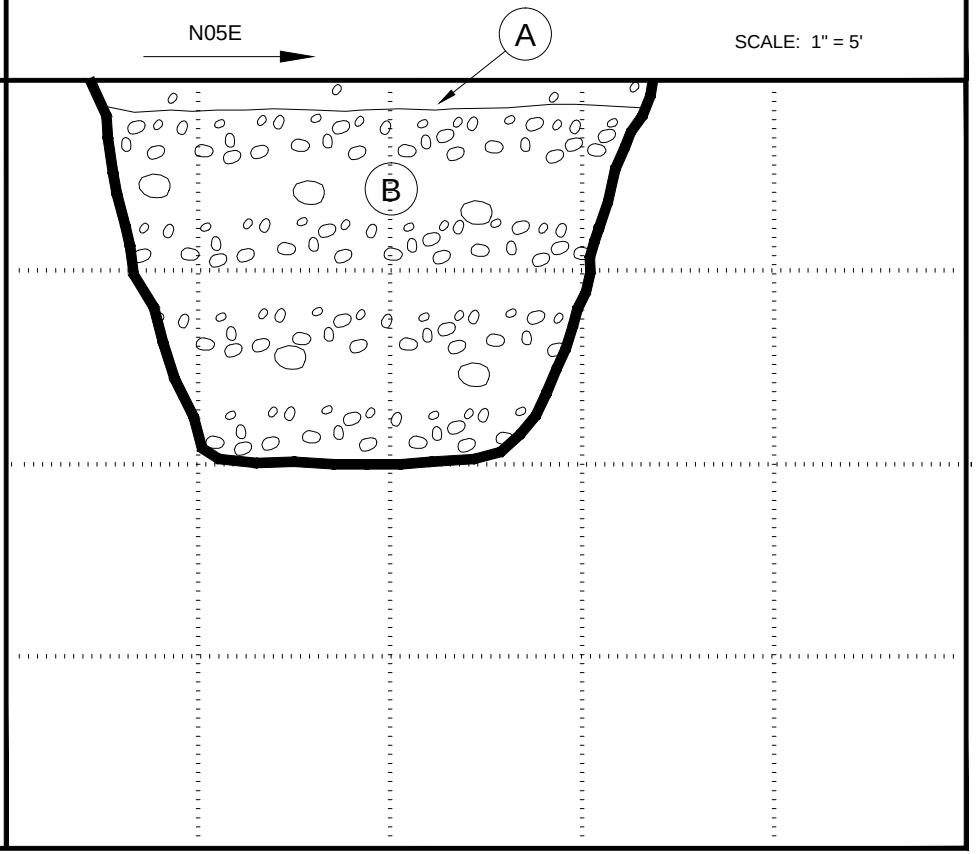
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N05E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		2	A: AGGREGATE BASE (AB): 8 inches thick (Cement Treated) B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
5	b		2	
	b		2	
10	b		2	Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-5

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-3

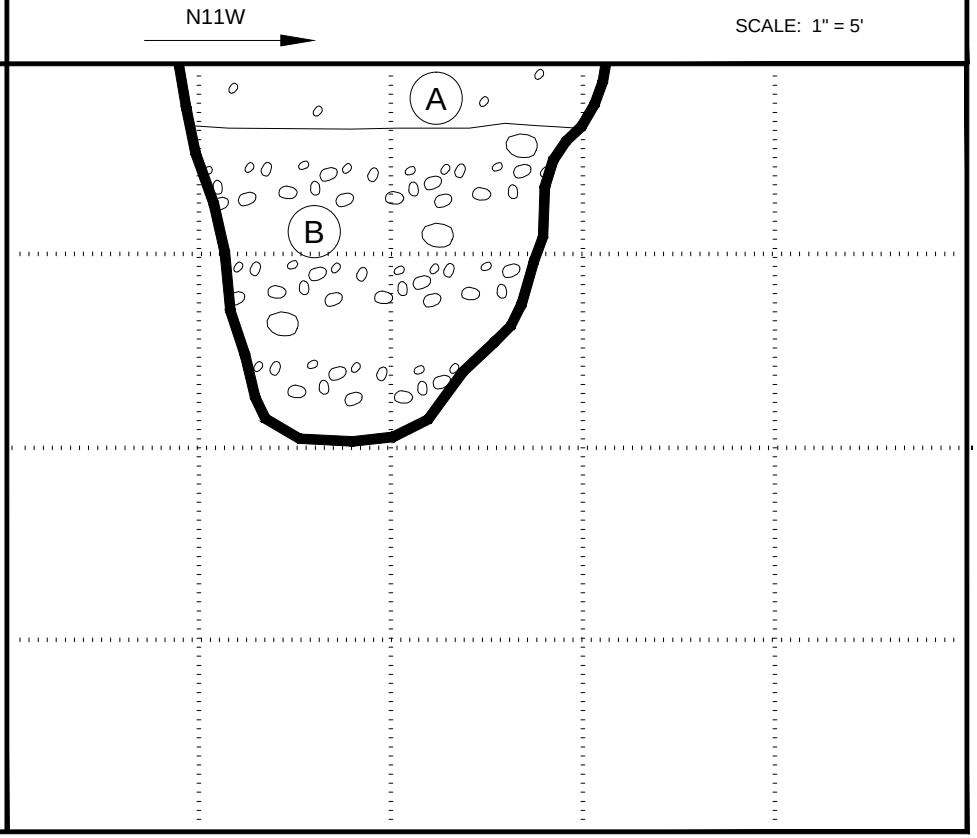
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-1-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N11W
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 18 inches thick (Cement Treated)
	b		2	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
	b		1	
5				
	b		1	
	b		1	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-6

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-4

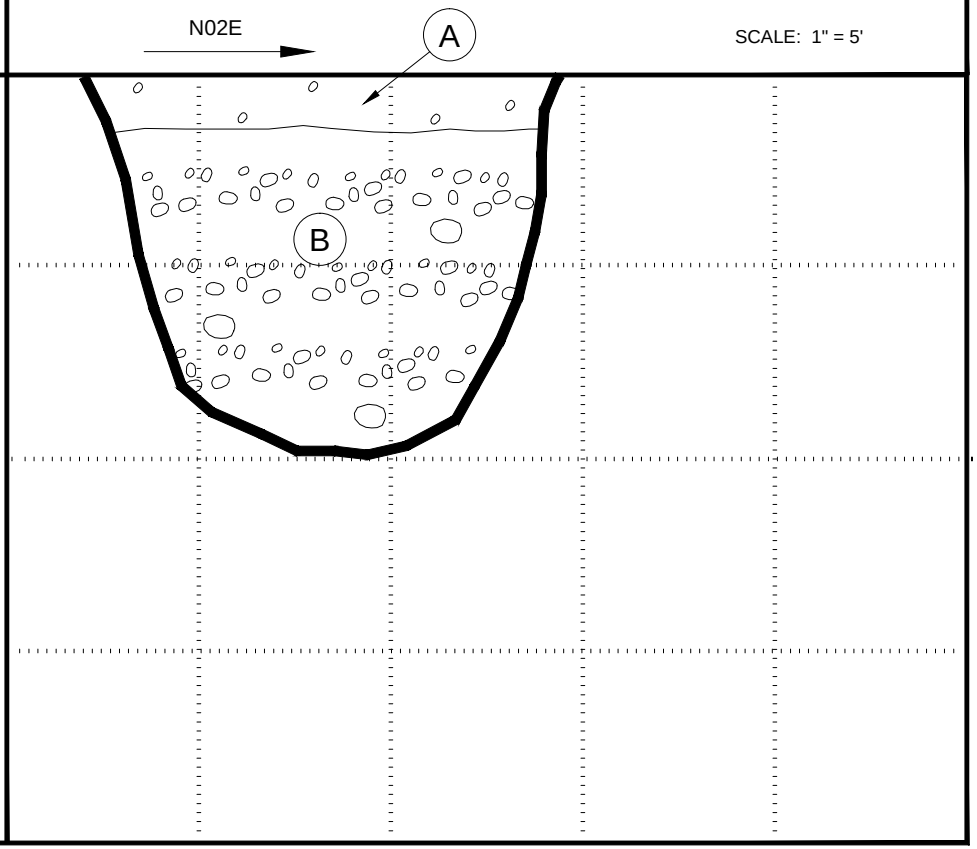
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N02E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 18 inches thick (Cement Treated)
	b		2	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
5	b		2	
	b		2	
10	b		1	
				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-7

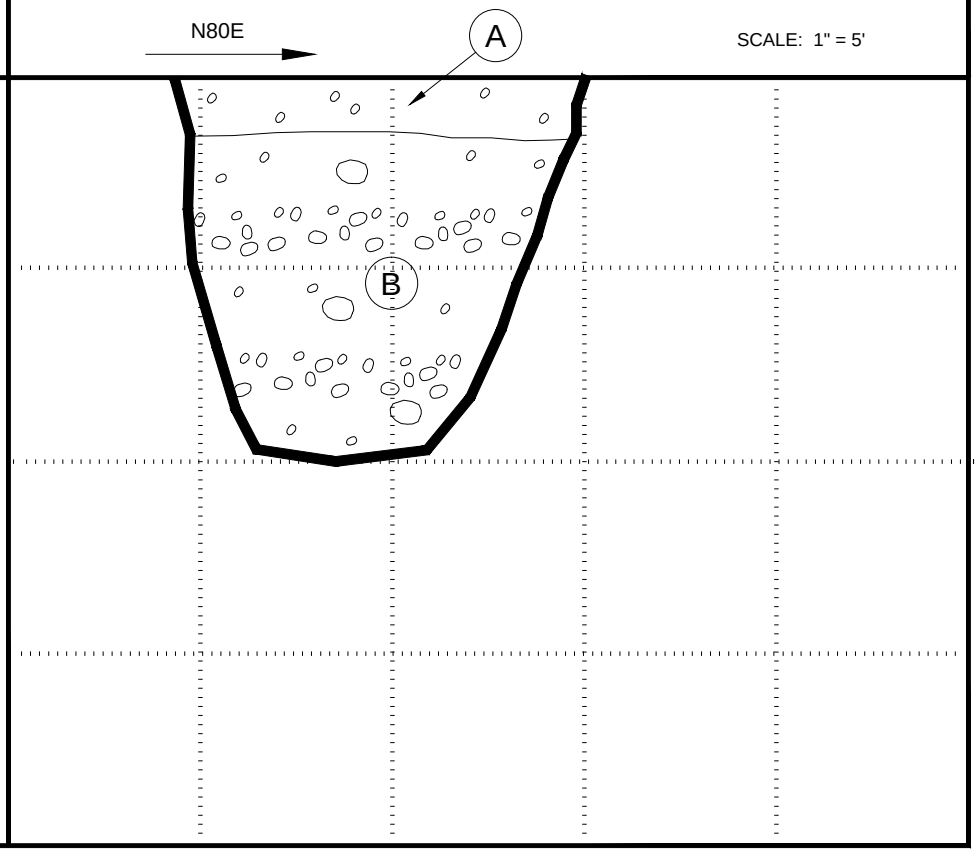
SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-5

JOB NO.: 18G145-1	EQUIPMENT USED: Backhoe	WATER DEPTH: Dry
PROJECT: Proposed Warehouse	LOGGED BY: Jason Hiskey	SEEPAGE DEPTH: Dry
LOCATION: Irwindale, CA	ORIENTATION: N80E	READINGS TAKEN: At Completion
DATE: 5-1-2018	ELEVATION:	

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 18 inches thick (Cement Treated)
	b		2	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
	b		1	
5				
	b		2	
	b		2	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-8

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-6

JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-1-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N05E
ELEVATION:

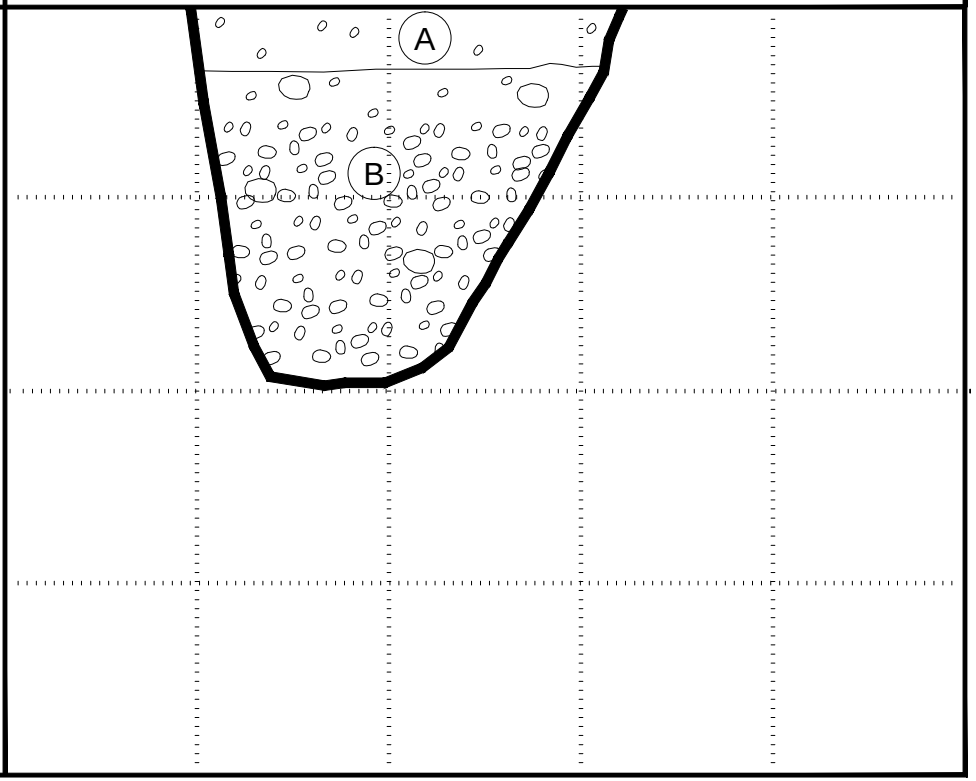
WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 18 inches thick (Cement Treated)
	b		1	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry
	b		1	
5				
	b		1	
	b		1	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION

N05E

SCALE: 1" = 5'



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-9

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-7

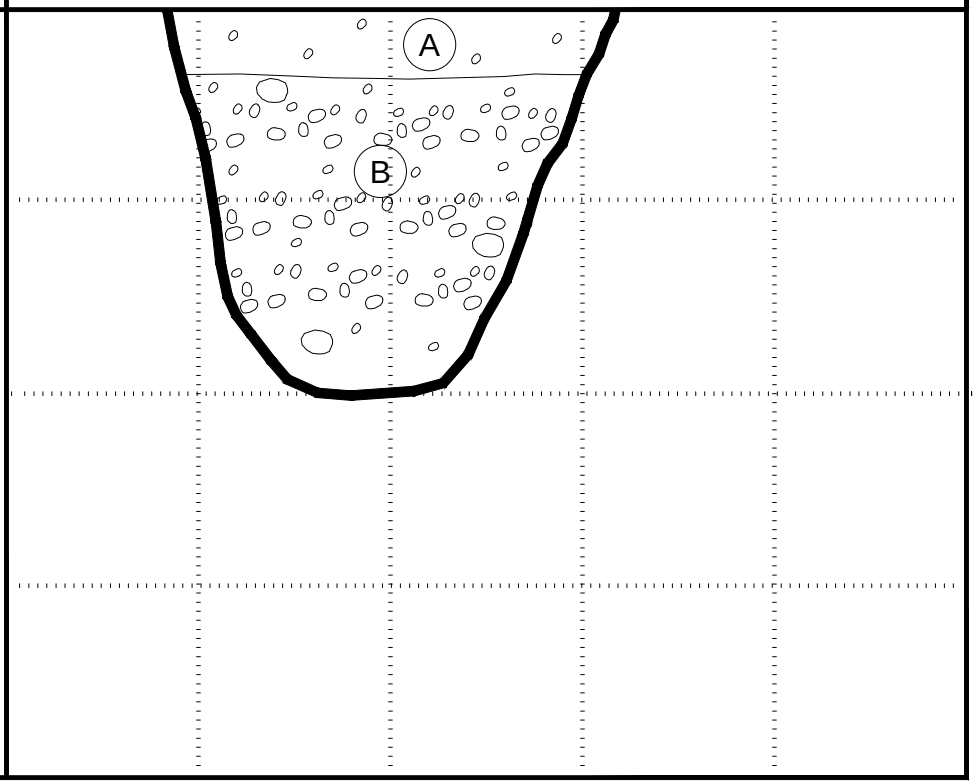
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-1-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N80E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		1	A: AGGREGATE BASE (AB): 18 inches thick (Cement Treated)
	b		1	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
5				
	b		2	
	b		1	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-10

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-8

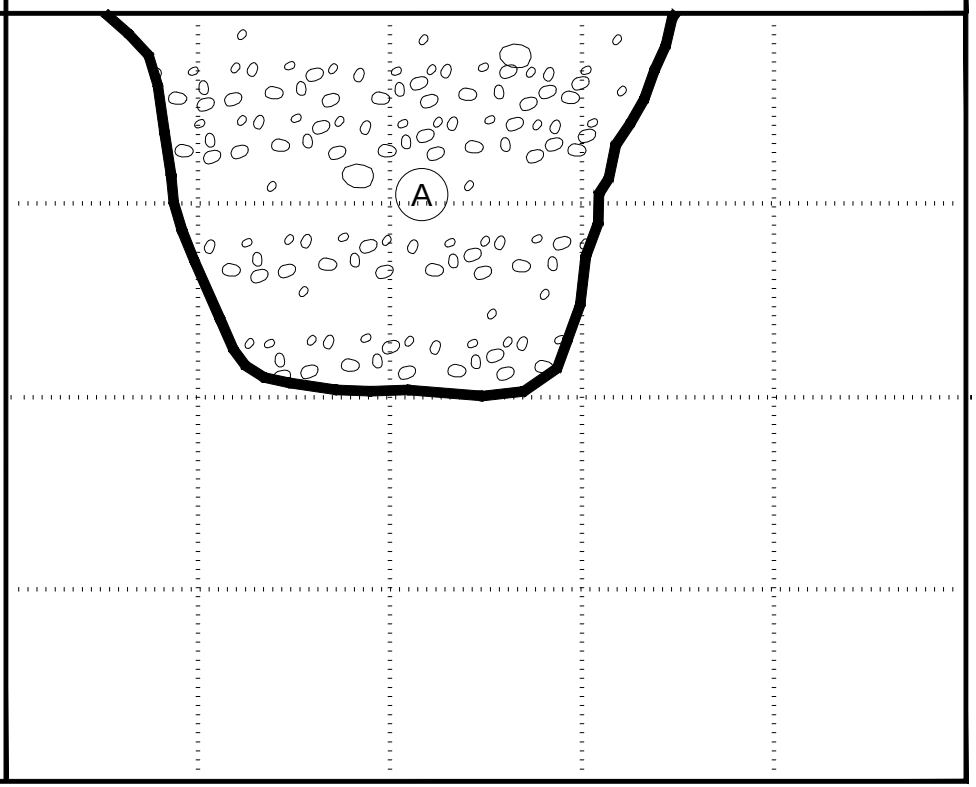
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N00W
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		2	A: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
	b		2	
5				
	b		4	
	b		2	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-11

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-9

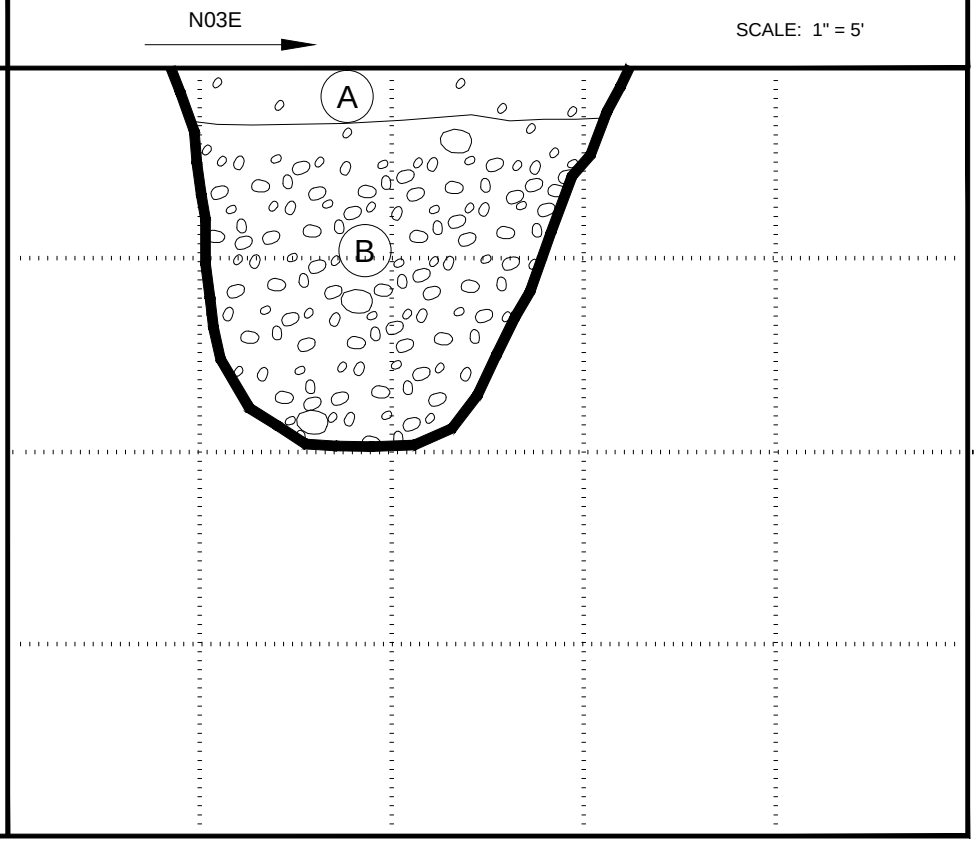
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-1-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N03E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		1	A: AGGREGATE BASE (AB): 12 inches thick (Cement Treated)
				B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry
	b		1	
5				
	b		1	
10	b		1	
				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-12

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-10

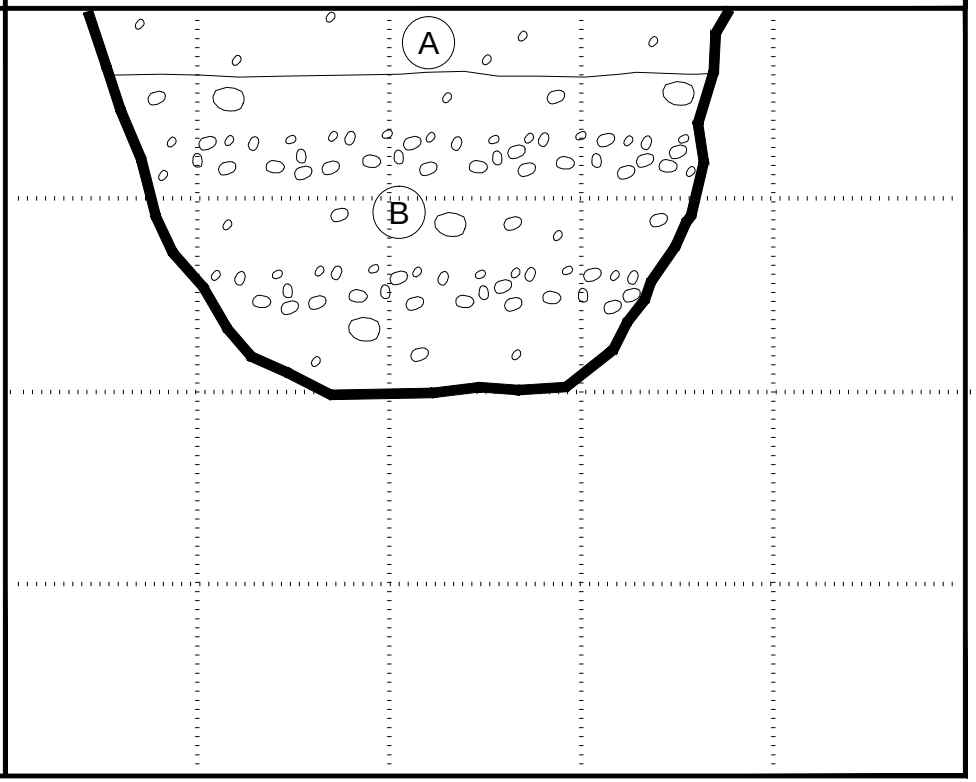
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N85E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 18 inches thick (Cement Treated)
	b		3	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
	b		2	
5				
	b		2	
	b		3	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-13

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-11

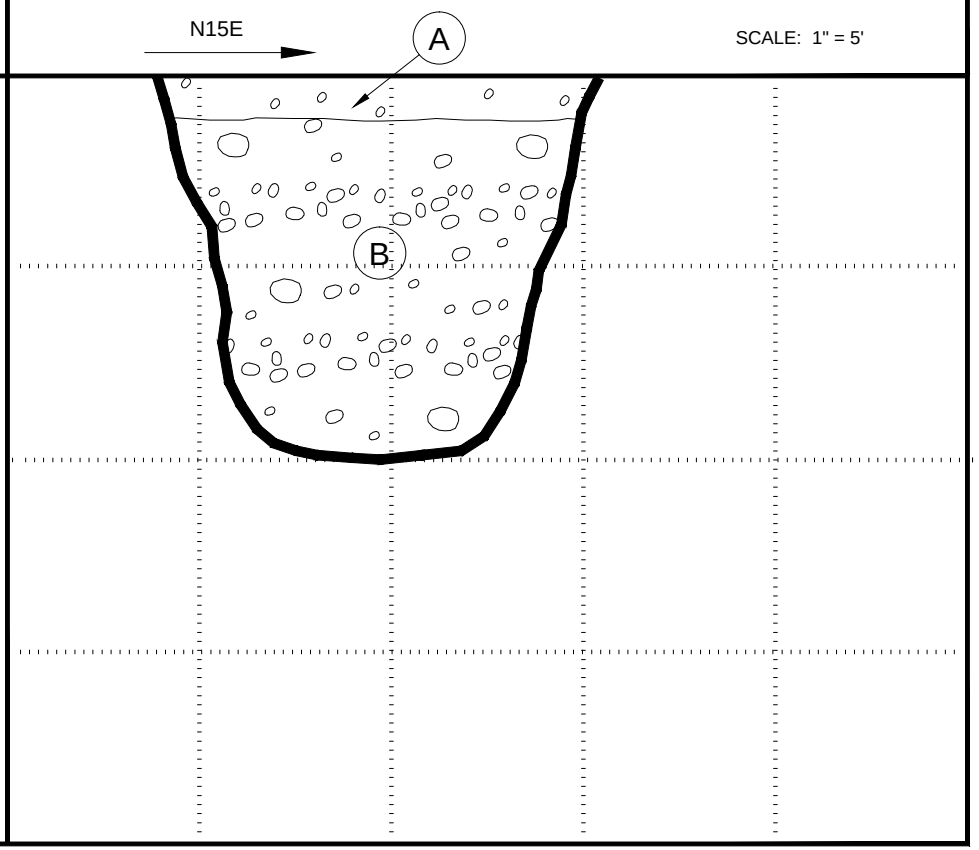
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-1-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N15E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		2	A: AGGREGATE BASE (AB): 12 inches thick (Cement Treated)
				B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
	b		2	
5				
	b		2	
	b		1	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-14

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-12

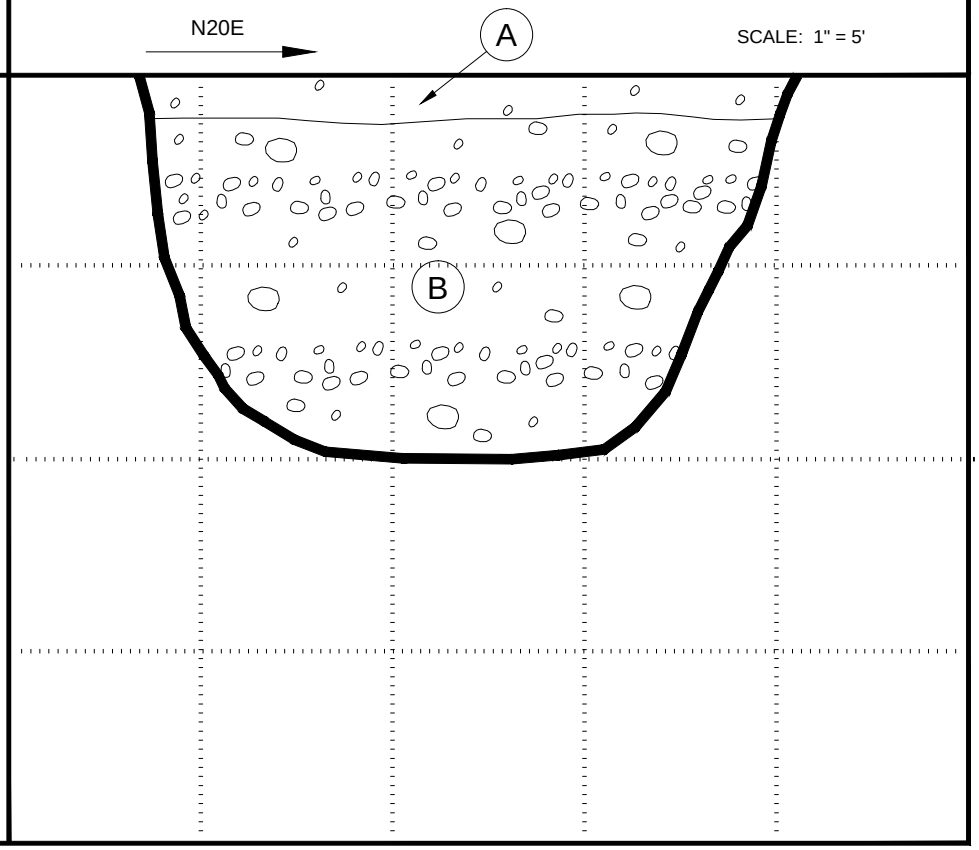
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N20E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 12 inches thick (Cement Treated)
	b		3	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
	b		2	
5				
	b		3	
	b		5	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-15

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-13

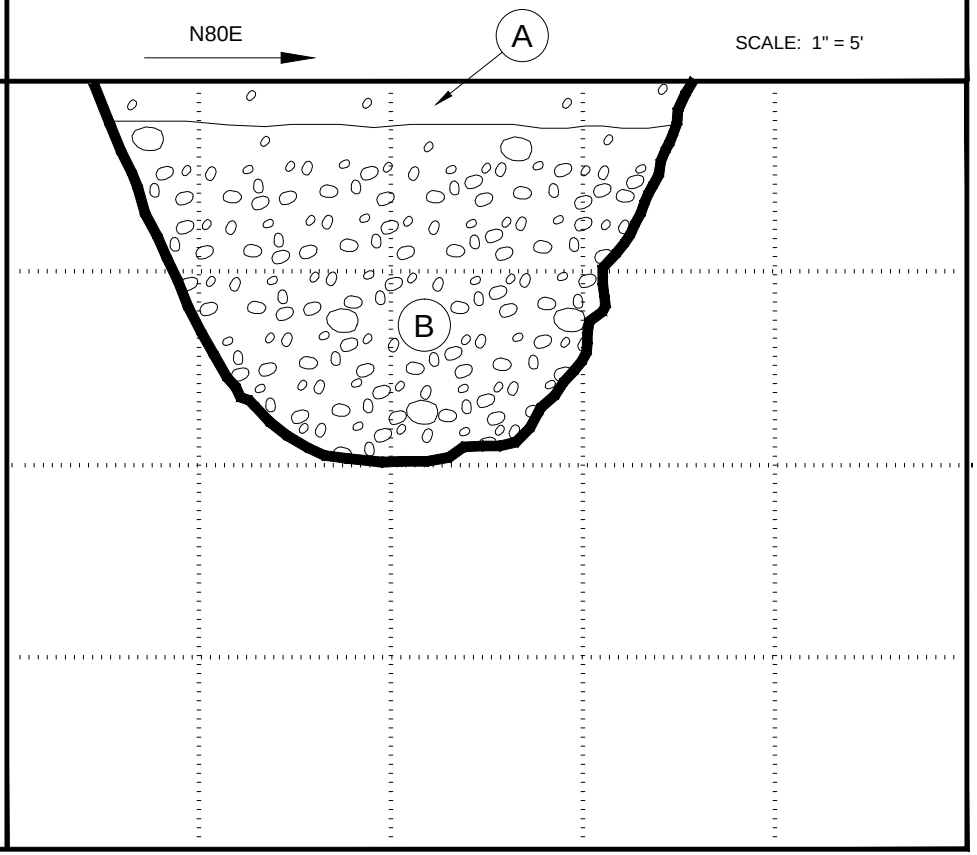
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N80E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 10 inches thick (Cement Treated)
	b		3	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
	b		2	
5				
	b		1	
	b		2	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-16

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-14

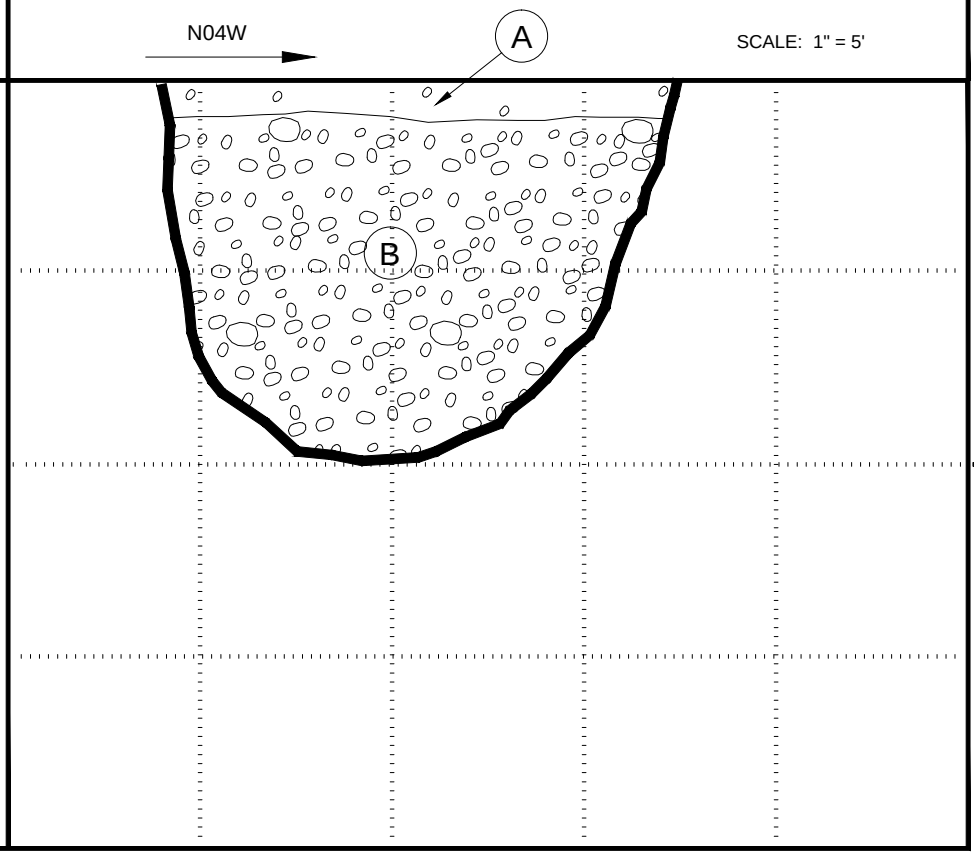
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 4-30-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N04W
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
				A: AGGREGATE BASE (AB): 12 inches thick (Cement Treated)
	b		2	B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry to damp
5	b		2	
	b		1	
10	b		2	
				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-17

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. T-15

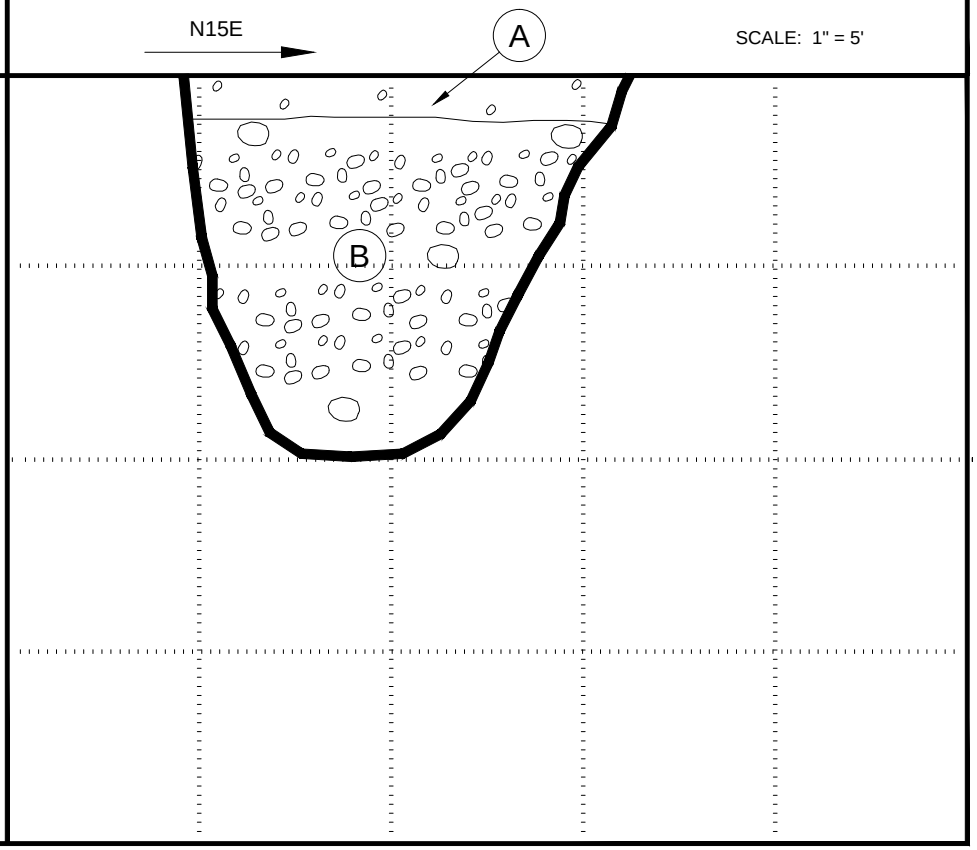
JOB NO.: 18G145-1
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-1-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Jason Hiskey
ORIENTATION: N15E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		1	A: AGGREGATE BASE (AB): 12 inches thick (Cement Treated)
				B: ALLUVIUM: Light Brown Gravelly fine to coarse Sand, extensive Cobbles, occasional Boulders, dense-dry
	b		1	
5				
	b		1	
	b		1	
10				Trench Terminated @ 10 feet
15				

GRAPHIC REPRESENTATION

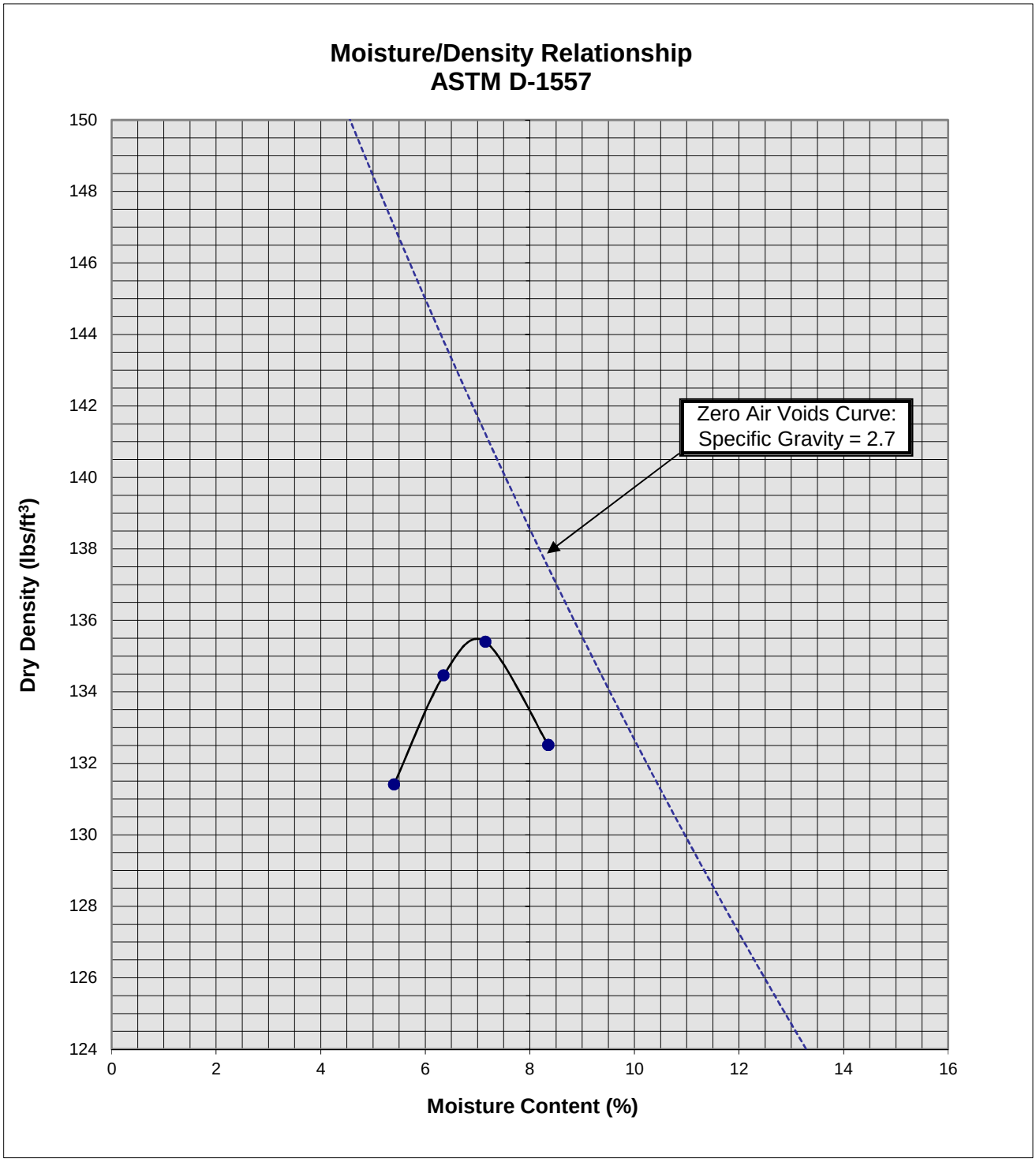


KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-18

APPENDIX C

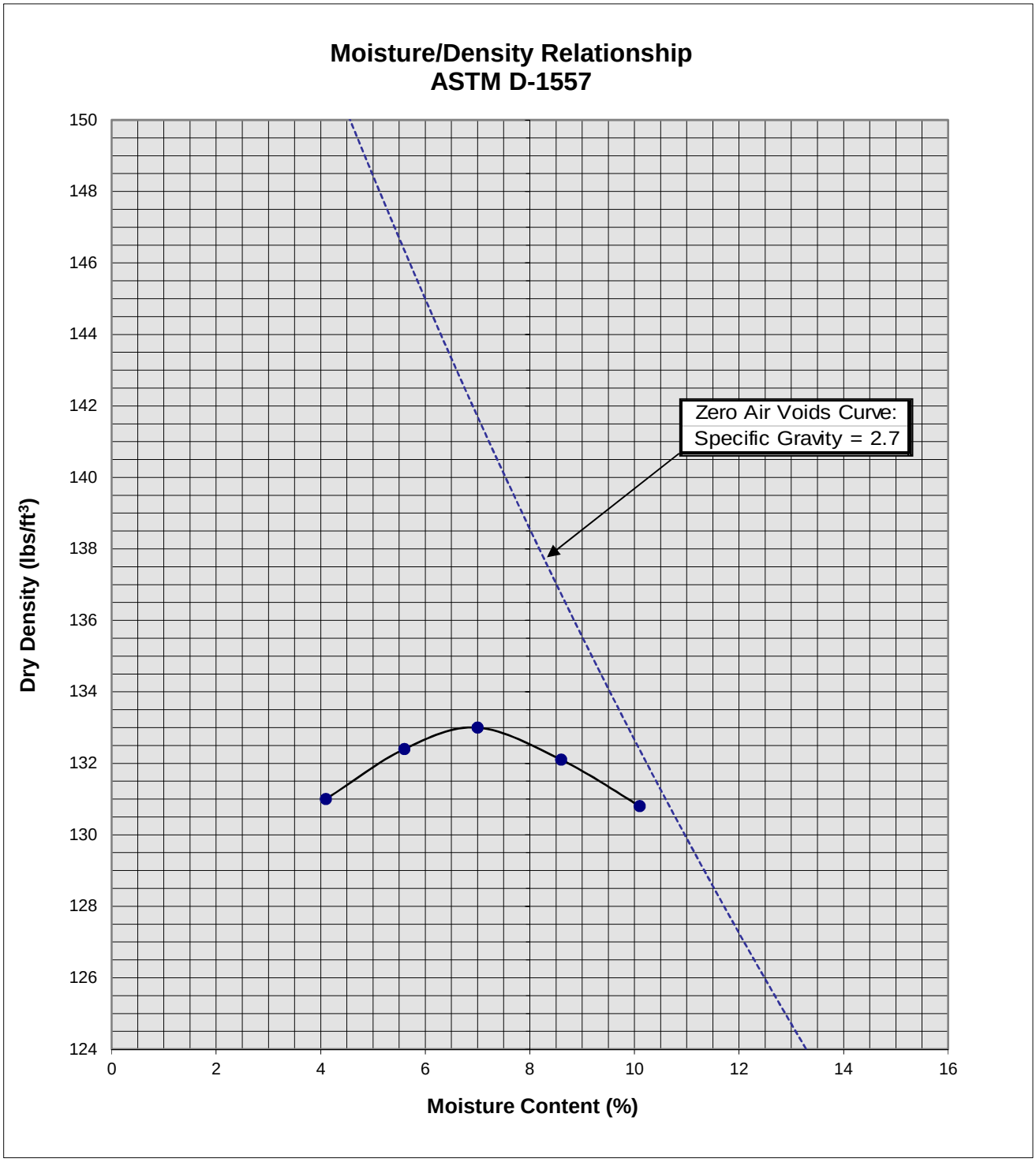


Soil ID Number	B-1 @ 0 to 5'
Optimum Moisture (%)	5.5
Maximum Dry Density (pcf)	138
Soil Classification	Brown fine to coarse Sand, some fine Gravel, some Cobbles

Note: Maximum Density and Optimum Moisture are based on 15% rock correction.

Proposed Warehouse
Irwindale, California
Project No. 18G145
PLATE C-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

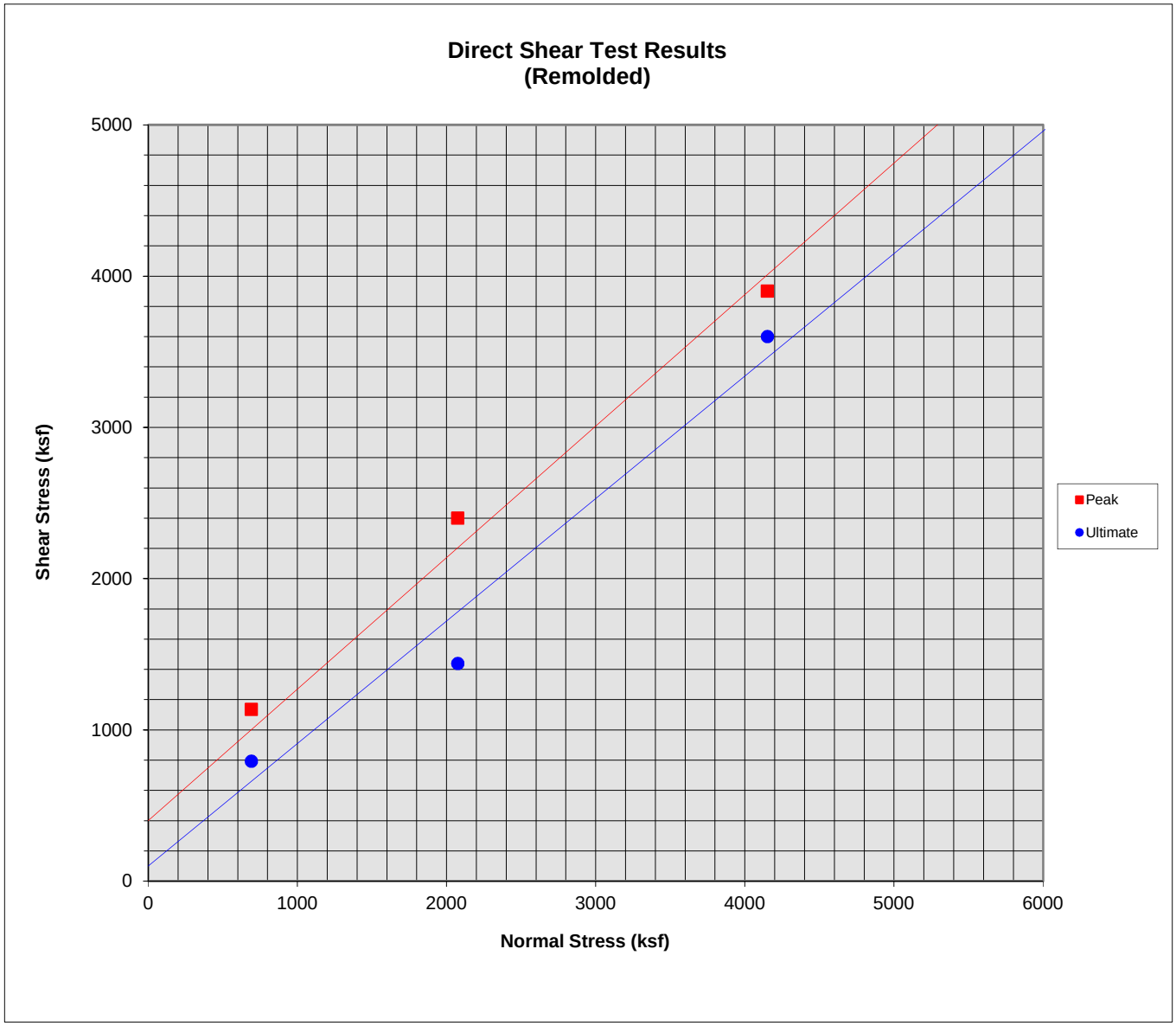


Soil ID Number	B-3 @ 0 to 5'
Optimum Moisture (%)	4.5
Maximum Dry Density (pcf)	141
Soil Classification	Gray Brown Gravelly fine to coarse Sand, some Cobbles

Note: Maximum Density and Optimum Moisture are based on 35% rock correction.

Proposed Warehouse
Irwindale, California
Project No. 18G145
PLATE C-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation



Sample Description: B-1 @ 0 to 5 feet

Classification: Gray Brown fine to coarse Sand, some fine to coarse Gravel

Sample Data	
Remolded Moisture Content	7.0
Final Moisture Content	14.0
Remolded Dry Density	122.0
Percent Compaction	90.0
Final Dry Density	---
Specimen Diameter (in)	
Specimen Thickness (in)	2.4

Test Results

	Peak	Ultimate
ϕ (°)	41	39
C (psf)	400	100

Proposed Commercial/Industrial Building
Irwindale, California
Project No. 18G145
PLATE C-3

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX D

GRADING GUIDE SPECIFICATIONS

These grading guide specifications are intended to provide typical procedures for grading operations. They are intended to supplement the recommendations contained in the geotechnical investigation report for this project. Should the recommendations in the geotechnical investigation report conflict with the grading guide specifications, the more site specific recommendations in the geotechnical investigation report will govern.

General

- The Earthwork Contractor is responsible for the satisfactory completion of all earthwork in accordance with the plans and geotechnical reports, and in accordance with city, county, and applicable building codes.

- The Geotechnical Engineer is the representative of the Owner/Builder for the purpose of implementing the report recommendations and guidelines. These duties are not intended to relieve the Earthwork Contractor of any responsibility to perform in a workman-like manner, nor is the Geotechnical Engineer to direct the grading equipment or personnel employed by the Contractor.

- The Earthwork Contractor is required to notify the Geotechnical Engineer of the anticipated work and schedule so that testing and inspections can be provided. If necessary, work may be stopped and redone if personnel have not been scheduled in advance.

- The Earthwork Contractor is required to have suitable and sufficient equipment on the job-site to process, moisture condition, mix and compact the amount of fill being placed to the approved compaction. In addition, suitable support equipment should be available to conform with recommendations and guidelines in this report.

- Canyon cleanouts, overexcavation areas, processed ground to receive fill, key excavations, subdrains and benches should be observed by the Geotechnical Engineer prior to placement of any fill. It is the Earthwork Contractor's responsibility to notify the Geotechnical Engineer of areas that are ready for inspection.

- Excavation, filling, and subgrade preparation should be performed in a manner and sequence that will provide drainage at all times and proper control of erosion. Precipitation, springs, and seepage water encountered shall be pumped or drained to provide a suitable working surface. The Geotechnical Engineer must be informed of springs or water seepage encountered during grading or foundation construction for possible revision to the recommended construction procedures and/or installation of subdrains.

Site Preparation

- The Earthwork Contractor is responsible for all clearing, grubbing, stripping and site preparation for the project in accordance with the recommendations of the Geotechnical Engineer.

- If any materials or areas are encountered by the Earthwork Contractor which are suspected of having toxic or environmentally sensitive contamination, the Geotechnical Engineer and Owner/Builder should be notified immediately.

- Major vegetation should be stripped and disposed of off-site. This includes trees, brush, heavy grasses and any materials considered unsuitable by the Geotechnical Engineer.

- Underground structures such as basements, cesspools or septic disposal systems, mining shafts, tunnels, wells and pipelines should be removed under the inspection of the Geotechnical Engineer and recommendations provided by the Geotechnical Engineer and/or city, county or state agencies. If such structures are known or found, the Geotechnical Engineer should be notified as soon as possible so that recommendations can be formulated.

- Any topsoil, slopewash, colluvium, alluvium and rock materials which are considered unsuitable by the Geotechnical Engineer should be removed prior to fill placement.

- Remaining voids created during site clearing caused by removal of trees, foundations basements, irrigation facilities, etc., should be excavated and filled with compacted fill.

- Subsequent to clearing and removals, areas to receive fill should be scarified to a depth of 10 to 12 inches, moisture conditioned and compacted

- The moisture condition of the processed ground should be at or slightly above the optimum moisture content as determined by the Geotechnical Engineer. Depending upon field conditions, this may require air drying or watering together with mixing and/or discing.

Compacted Fills

- Soil materials imported to or excavated on the property may be utilized in the fill, provided each material has been determined to be suitable in the opinion of the Geotechnical Engineer. Unless otherwise approved by the Geotechnical Engineer, all fill materials shall be free of deleterious, organic, or frozen matter, shall contain no chemicals that may result in the material being classified as “contaminated,” and shall be very low to non-expansive with a maximum expansion index (EI) of 50. The top 12 inches of the compacted fill should have a maximum particle size of 3 inches, and all underlying compacted fill material a maximum 6-inch particle size, except as noted below.

- All soils should be evaluated and tested by the Geotechnical Engineer. Materials with high expansion potential, low strength, poor gradation or containing organic materials may require removal from the site or selective placement and/or mixing to the satisfaction of the Geotechnical Engineer.

- Rock fragments or rocks less than 6 inches in their largest dimensions, or as otherwise determined by the Geotechnical Engineer, may be used in compacted fill, provided the distribution and placement is satisfactory in the opinion of the Geotechnical Engineer.

- Rock fragments or rocks greater than 12 inches should be taken off-site or placed in accordance with recommendations and in areas designated as suitable by the Geotechnical Engineer. These materials should be placed in accordance with Plate D-8 of these Grading Guide Specifications and in accordance with the following recommendations:

    - Rocks 12 inches or more in diameter should be placed in rows at least 15 feet apart, 15 feet from the edge of the fill, and 10 feet or more below subgrade. Spaces should be left between each rock fragment to provide for placement and compaction of soil around the fragments.

    - Fill materials consisting of soil meeting the minimum moisture content requirements and free of oversize material should be placed between and over the rows of rock or

concrete. Ample water and compactive effort should be applied to the fill materials as they are placed in order that all of the voids between each of the fragments are filled and compacted to the specified density.

- Subsequent rows of rocks should be placed such that they are not directly above a row placed in the previous lift of fill. A minimum 5-foot offset between rows is recommended.

- To facilitate future trenching, oversized material should not be placed within the range of foundation excavations, future utilities or other underground construction unless specifically approved by the soil engineer and the developer/owner representative.

- Fill materials approved by the Geotechnical Engineer should be placed in areas previously prepared to receive fill and in evenly placed, near horizontal layers at about 6 to 8 inches in loose thickness, or as otherwise determined by the Geotechnical Engineer for the project.

- Each layer should be moisture conditioned to optimum moisture content, or slightly above, as directed by the Geotechnical Engineer. After proper mixing and/or drying, to evenly distribute the moisture, the layers should be compacted to at least 90 percent of the maximum dry density in compliance with ASTM D-1557-78 unless otherwise indicated.

- Density and moisture content testing should be performed by the Geotechnical Engineer at random intervals and locations as determined by the Geotechnical Engineer. These tests are intended as an aid to the Earthwork Contractor, so he can evaluate his workmanship, equipment effectiveness and site conditions. The Earthwork Contractor is responsible for compaction as required by the Geotechnical Report(s) and governmental agencies.

- Fill areas unused for a period of time may require moisture conditioning, processing and recompaction prior to the start of additional filling. The Earthwork Contractor should notify the Geotechnical Engineer of his intent so that an evaluation can be made.

- Fill placed on ground sloping at a 5-to-1 inclination (horizontal-to-vertical) or steeper should be benched into bedrock or other suitable materials, as directed by the Geotechnical Engineer. Typical details of benching are illustrated on Plates D-2, D-4, and D-5.

- Cut/fill transition lots should have the cut portion overexcavated to a depth of at least 3 feet and rebuilt with fill (see Plate D-1), as determined by the Geotechnical Engineer.

- All cut lots should be inspected by the Geotechnical Engineer for fracturing and other bedrock conditions. If necessary, the pads should be overexcavated to a depth of 3 feet and rebuilt with a uniform, more cohesive soil type to impede moisture penetration.

- Cut portions of pad areas above buttresses or stabilizations should be overexcavated to a depth of 3 feet and rebuilt with uniform, more cohesive compacted fill to impede moisture penetration.

- Non-structural fill adjacent to structural fill should typically be placed in unison to provide lateral support. Backfill along walls must be placed and compacted with care to ensure that excessive unbalanced lateral pressures do not develop. The type of fill material placed adjacent to below grade walls must be properly tested and approved by the Geotechnical Engineer with consideration of the lateral earth pressure used in the design.

Foundations

- The foundation influence zone is defined as extending one foot horizontally from the outside edge of a footing, and proceeding downward at a ½ horizontal to 1 vertical (0.5:1) inclination.

- Where overexcavation beneath a footing subgrade is necessary, it should be conducted so as to encompass the entire foundation influence zone, as described above.

- Compacted fill adjacent to exterior footings should extend at least 12 inches above foundation bearing grade. Compacted fill within the interior of structures should extend to the floor subgrade elevation.

Fill Slopes

- The placement and compaction of fill described above applies to all fill slopes. Slope compaction should be accomplished by overfilling the slope, adequately compacting the fill in even layers, including the overfilled zone and cutting the slope back to expose the compacted core

- Slope compaction may also be achieved by backrolling the slope adequately every 2 to 4 vertical feet during the filling process as well as requiring the earth moving and compaction equipment to work close to the top of the slope. Upon completion of slope construction, the slope face should be compacted with a sheepsfoot connected to a sideboom and then grid rolled. This method of slope compaction should only be used if approved by the Geotechnical Engineer.

- Sandy soils lacking in adequate cohesion may be unstable for a finished slope condition and therefore should not be placed within 15 horizontal feet of the slope face.

- All fill slopes should be keyed into bedrock or other suitable material. Fill keys should be at least 15 feet wide and inclined at 2 percent into the slope. For slopes higher than 30 feet, the fill key width should be equal to one-half the height of the slope (see Plate D-5).

- All fill keys should be cleared of loose slough material prior to geotechnical inspection and should be approved by the Geotechnical Engineer and governmental agencies prior to filling.

- The cut portion of fill over cut slopes should be made first and inspected by the Geotechnical Engineer for possible stabilization requirements. The fill portion should be adequately keyed through all surficial soils and into bedrock or suitable material. Soils should be removed from the transition zone between the cut and fill portions (see Plate D-2).

Cut Slopes

- All cut slopes should be inspected by the Geotechnical Engineer to determine the need for stabilization. The Earthwork Contractor should notify the Geotechnical Engineer when slope cutting is in progress at intervals of 10 vertical feet. Failure to notify may result in a delay in recommendations.

- Cut slopes exposing loose, cohesionless sands should be reported to the Geotechnical Engineer for possible stabilization recommendations.

- All stabilization excavations should be cleared of loose slough material prior to geotechnical inspection. Stakes should be provided by the Civil Engineer to verify the location and dimensions of the key. A typical stabilization fill detail is shown on Plate D-5.

- Stabilization key excavations should be provided with subdrains. Typical subdrain details are shown on Plates D-6.

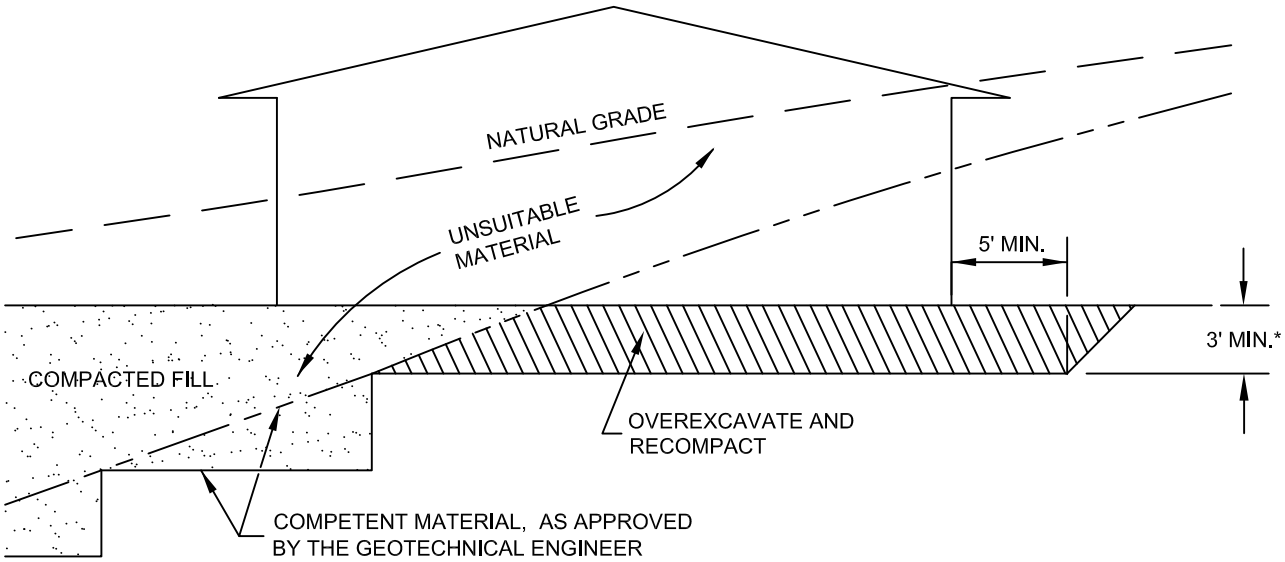
Subdrains

- Subdrains may be required in canyons and swales where fill placement is proposed. Typical subdrain details for canyons are shown on Plate D-3. Subdrains should be installed after approval of removals and before filling, as determined by the Soils Engineer.

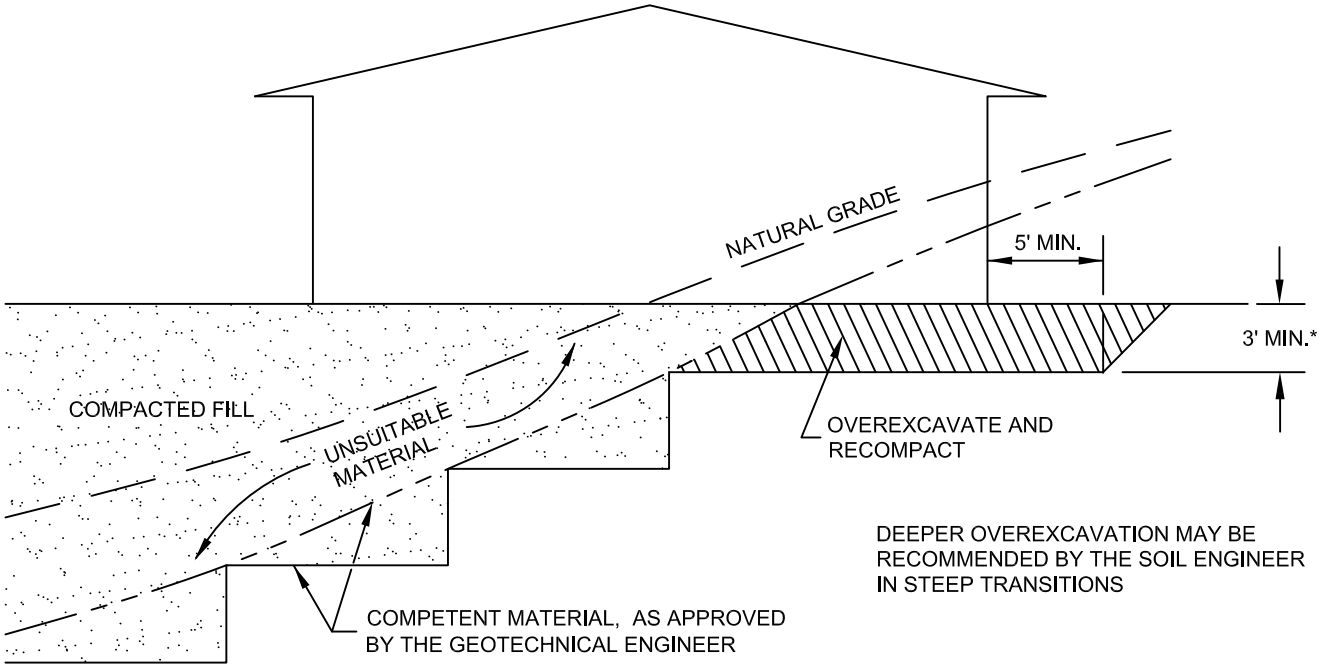
- Plastic pipe may be used for subdrains provided it is Schedule 40 or SDR 35 or equivalent. Pipe should be protected against breakage, typically by placement in a square-cut (backhoe) trench or as recommended by the manufacturer.

- Filter material for subdrains should conform to CALTRANS Specification 68-1.025 or as approved by the Geotechnical Engineer for the specific site conditions. Clean ¾-inch crushed rock may be used provided it is wrapped in an acceptable filter cloth and approved by the Geotechnical Engineer. Pipe diameters should be 6 inches for runs up to 500 feet and 8 inches for the downstream continuations of longer runs. Four-inch diameter pipe may be used in buttress and stabilization fills.

CUT LOT



CUT/FILL LOT (TRANSITION)



*SEE TEXT OF REPORT FOR SPECIFIC RECOMMENDATION. ACTUAL DEPTH OF OVEREXCAVATION MAY BE GREATER.

TRANSITION LOT DETAIL

GRADING GUIDE SPECIFICATIONS

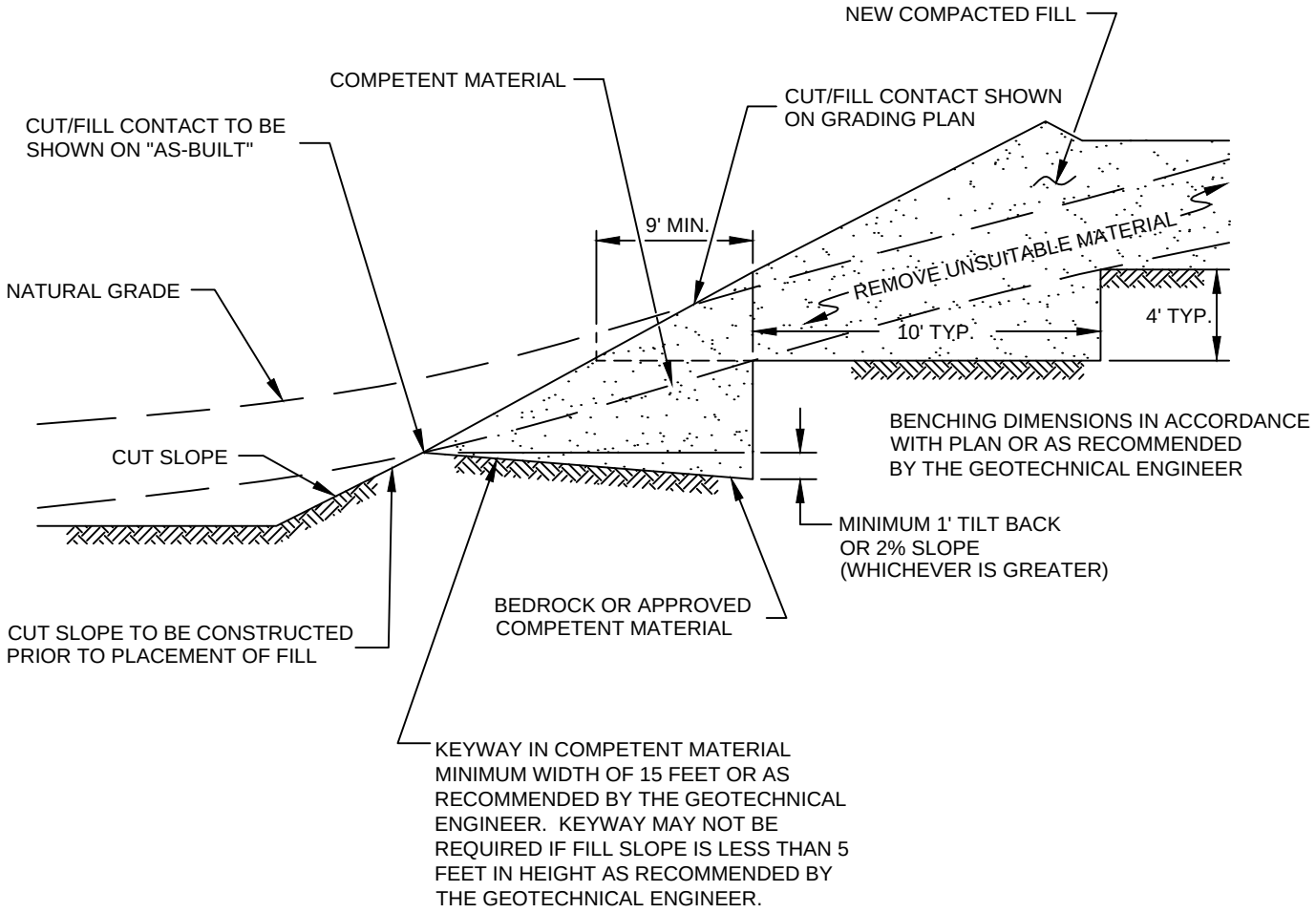
NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-1

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL



FILL ABOVE CUT SLOPE DETAIL

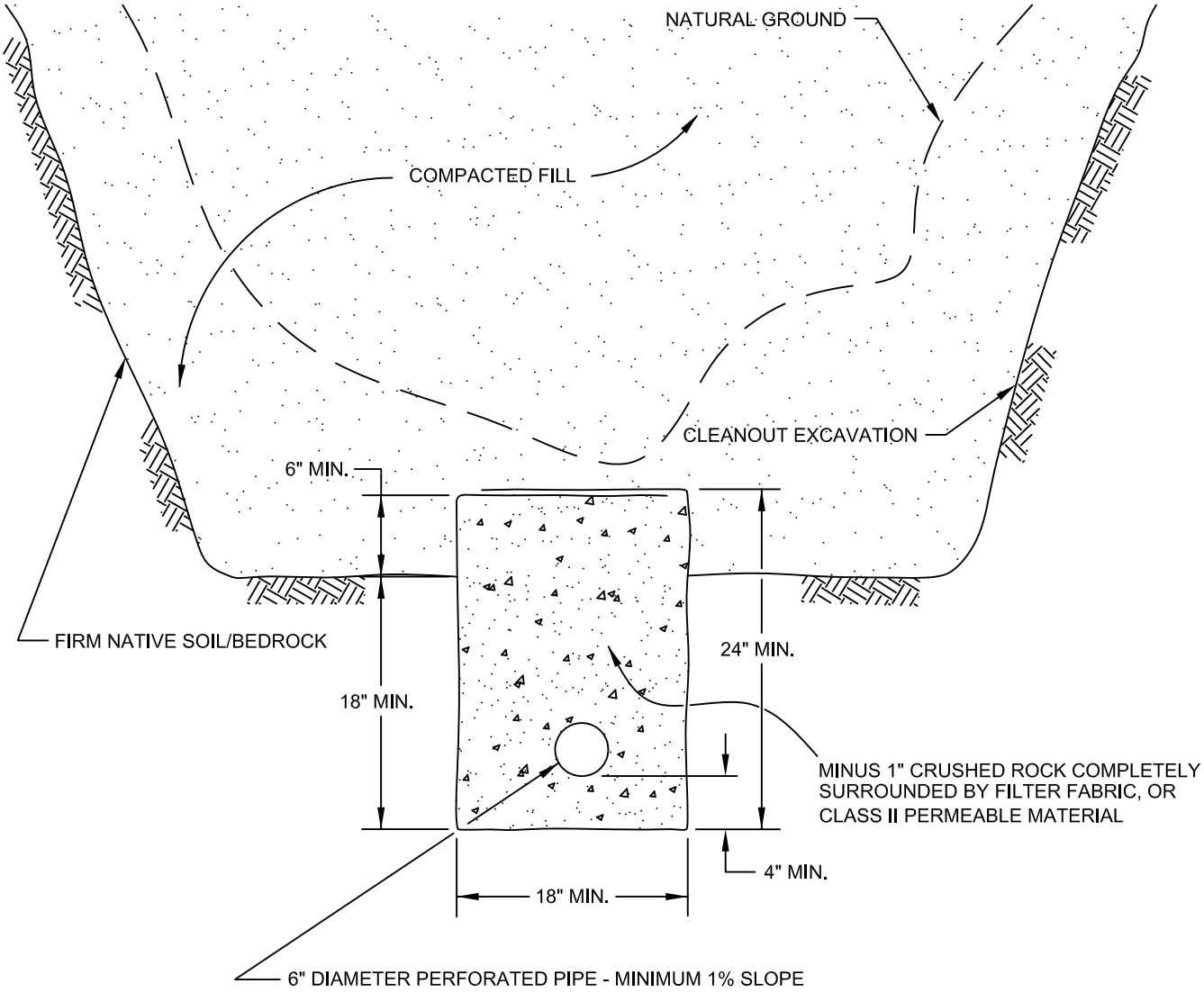
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-2

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



PIPE MATERIAL	DEPTH OF FILL OVER SUBDRAIN
ADS (CORRUGATED POLETHYLENE)	8
TRANSITE UNDERDRAIN	20
PVC OR ABS: SDR 35	35
SDR 21	100

SCHEMATIC ONLY
NOT TO SCALE

CANYON SUBDRAIN DETAIL

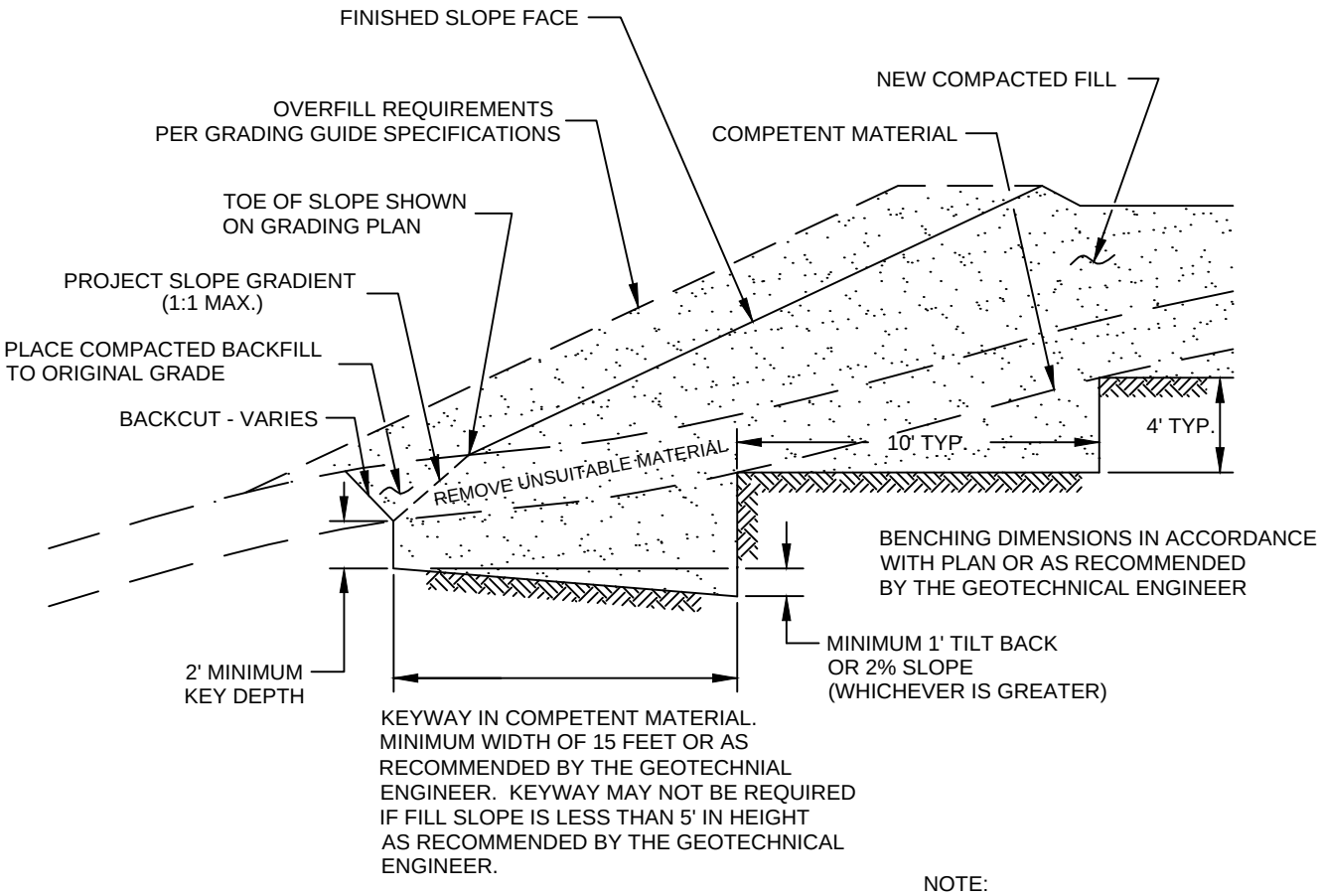
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-3

SOUTHERN CALIFORNIA GEOTECHNICAL



NOTE:
BENCHING SHALL BE REQUIRED
WHEN NATURAL SLOPES ARE
EQUAL TO OR STEEPER THAN 5:1
OR WHEN RECOMMENDED BY
THE GEOTECHNICAL ENGINEER.

FILL ABOVE NATURAL SLOPE DETAIL

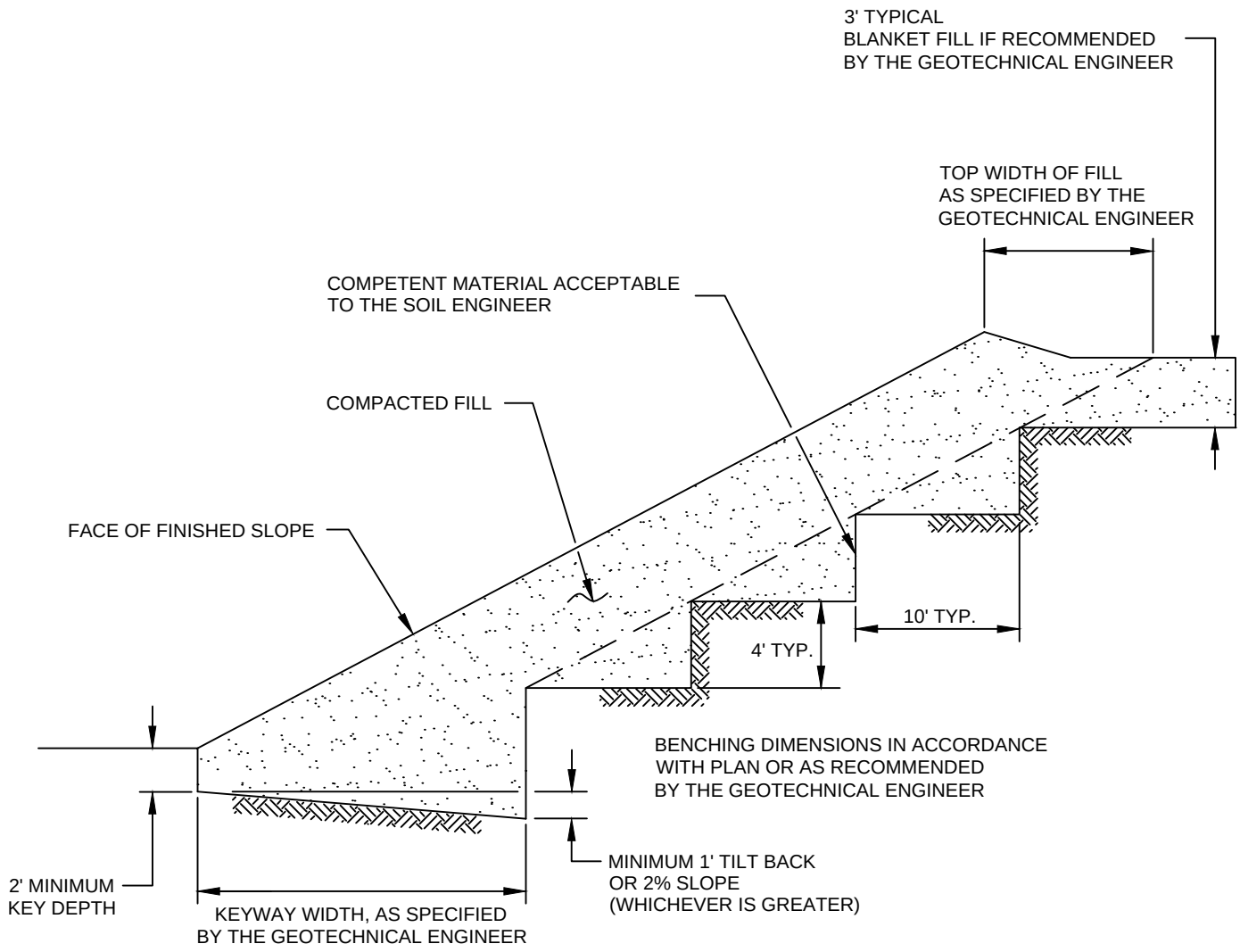
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-4

SoCalGeo
SOUTHERN CALIFORNIA GEOTECHNICAL



STABILIZATION FILL DETAIL

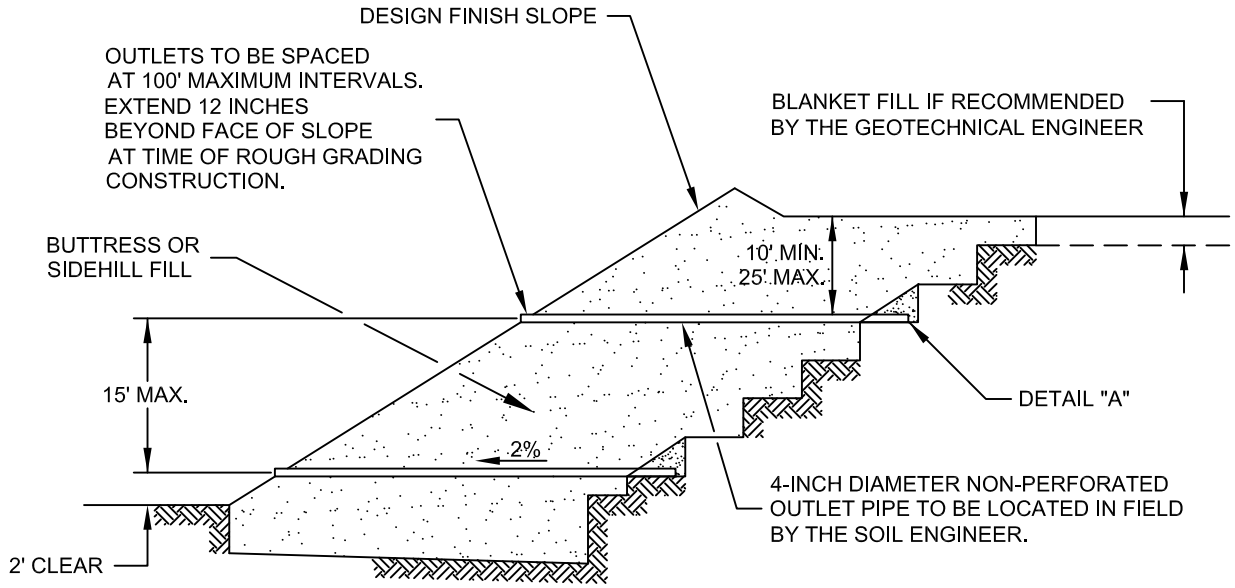
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-5

SOUTHERN CALIFORNIA GEOTECHNICAL



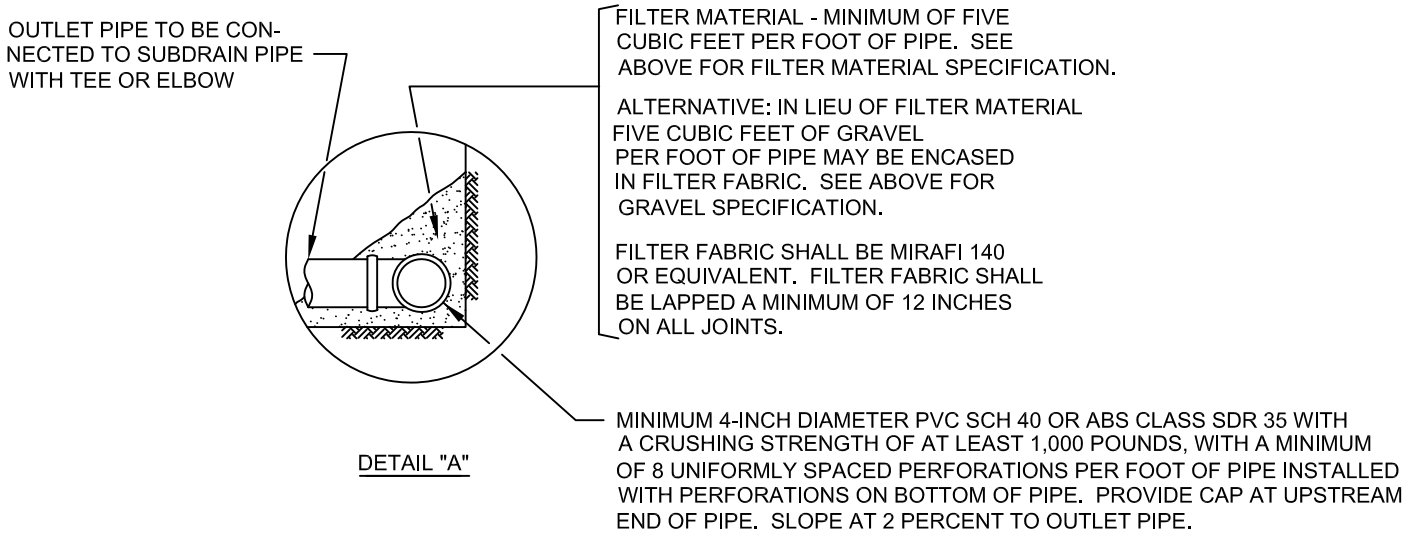
"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50



DETAIL "A"

NOTES:
1. TRENCH FOR OUTLET PIPES TO BE BACKFILLED WITH ON-SITE SOIL.

SLOPE FILL SUBDRAINS

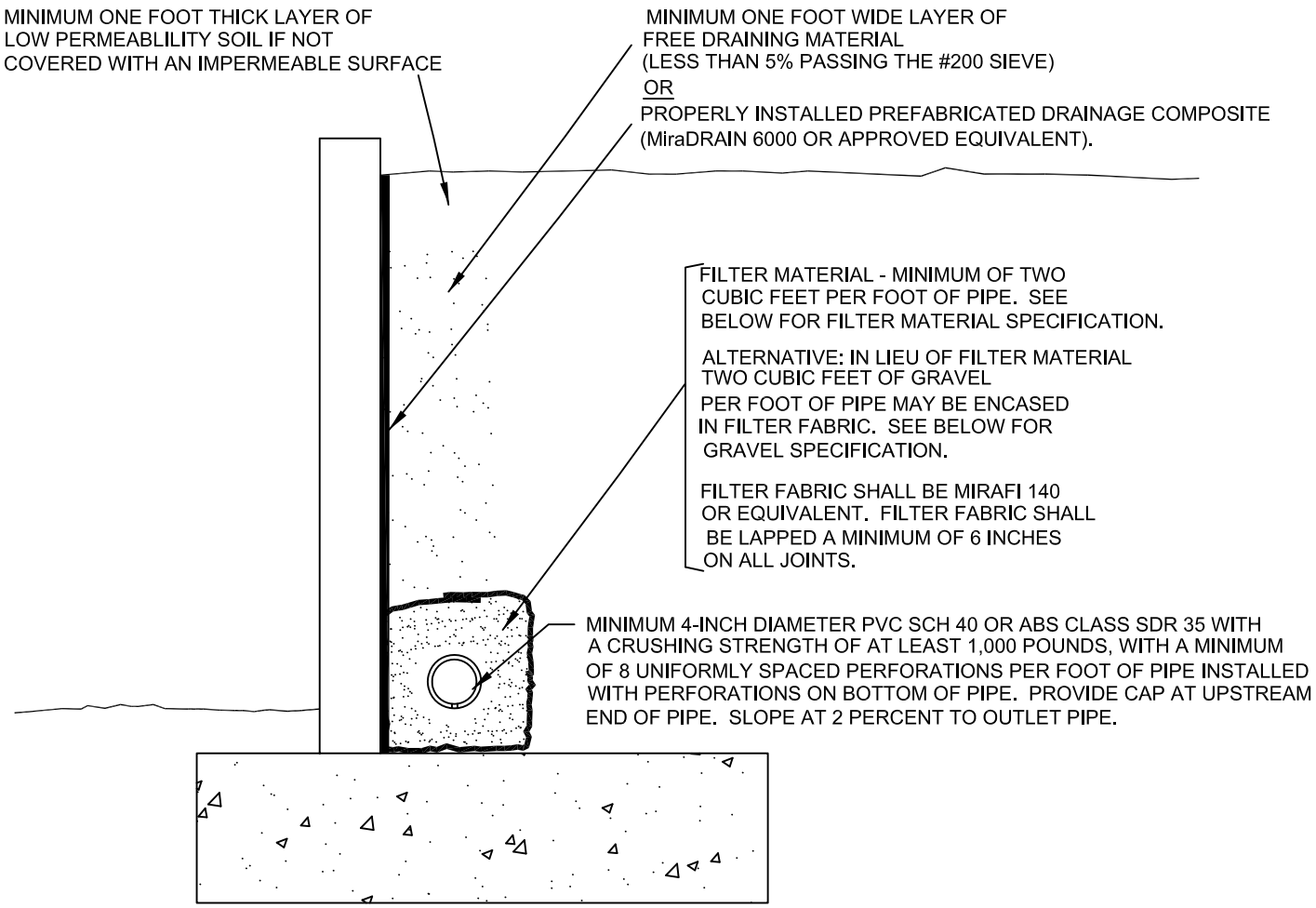
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: JAS
CHKD: GKM

PLATE D-6

SOUTHERN CALIFORNIA GEOTECHNICAL



"FILTER MATERIAL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT: (CONFORMS TO EMA STD. PLAN 323)

SIEVE SIZE	PERCENTAGE PASSING
1"	100
3/4"	90-100
3/8"	40-100
NO. 4	25-40
NO. 8	18-33
NO. 30	5-15
NO. 50	0-7
NO. 200	0-3

"GRAVEL" TO MEET FOLLOWING SPECIFICATION OR APPROVED EQUIVALENT:

SIEVE SIZE	MAXIMUM PERCENTAGE PASSING
1 1/2"	100
NO. 4	50
NO. 200	8

SAND EQUIVALENT = MINIMUM OF 50

RETAINING WALL BACKDRAINS

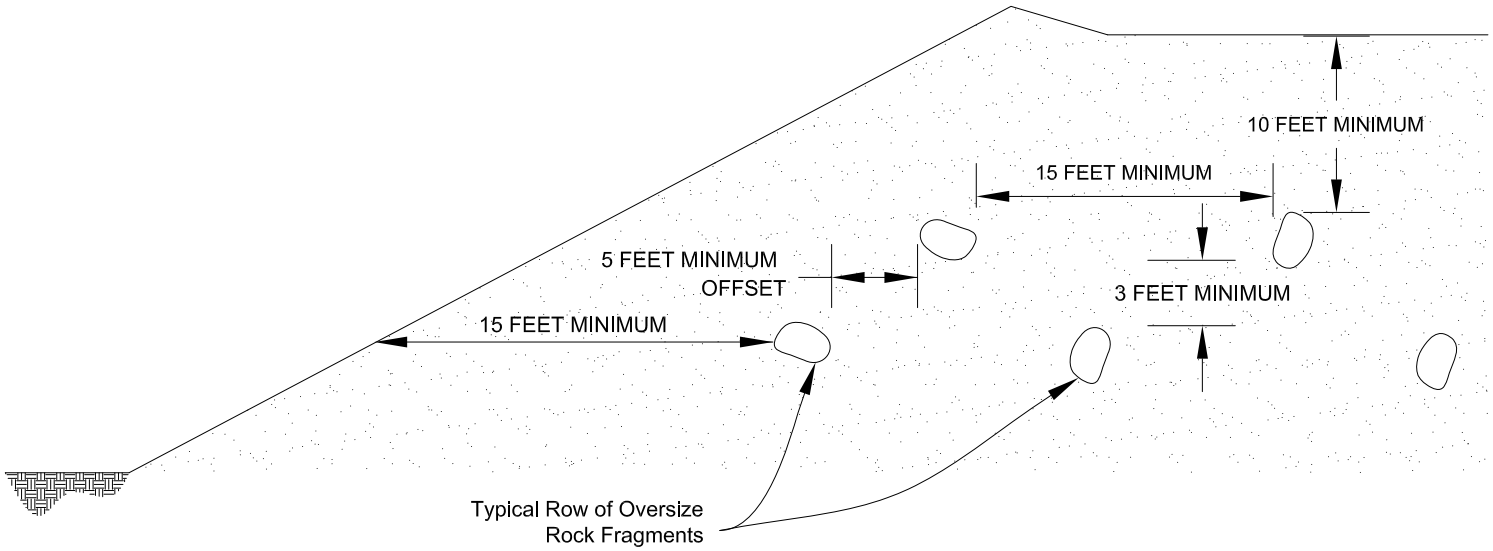
GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

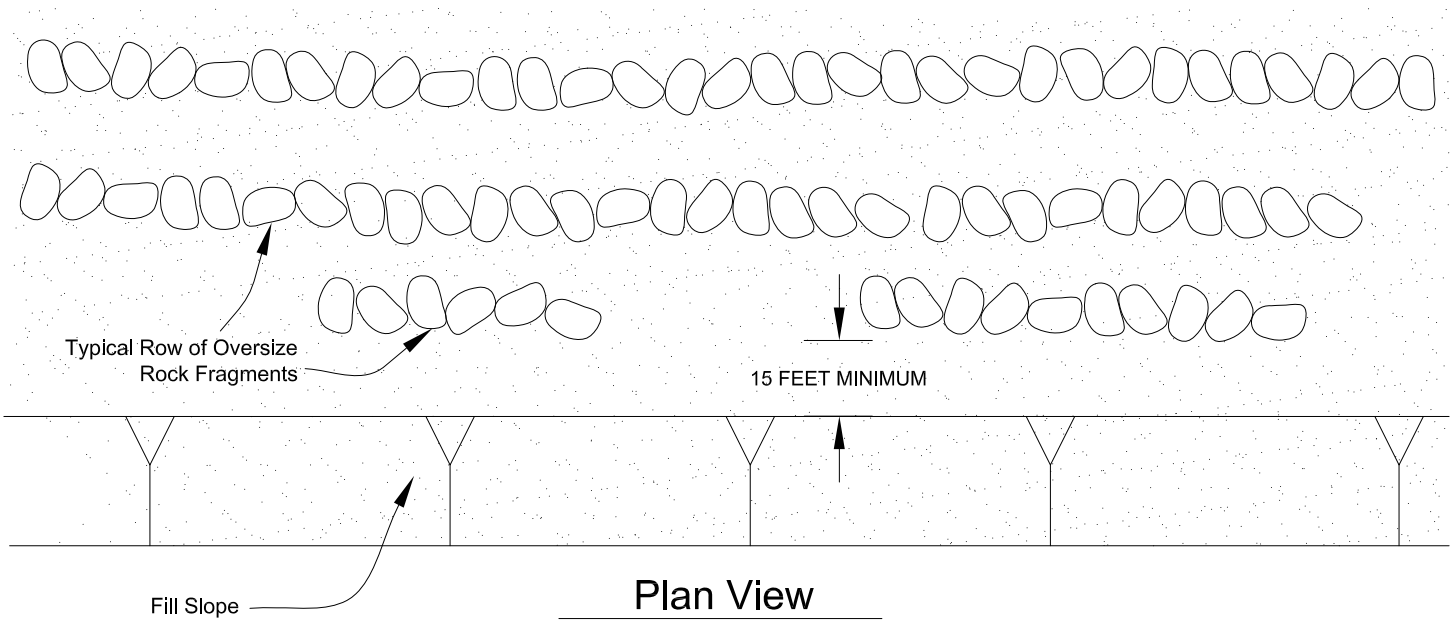
DRAWN: JAS
CHKD: GKM

PLATE D-7

SOUTHERN CALIFORNIA GEOTECHNICAL



Section View



Plan View

PLACEMENT OF OVERSIZED MATERIAL

GRADING GUIDE SPECIFICATIONS

NOT TO SCALE

DRAWN: PM
CHKD: GKM

PLATE D-8

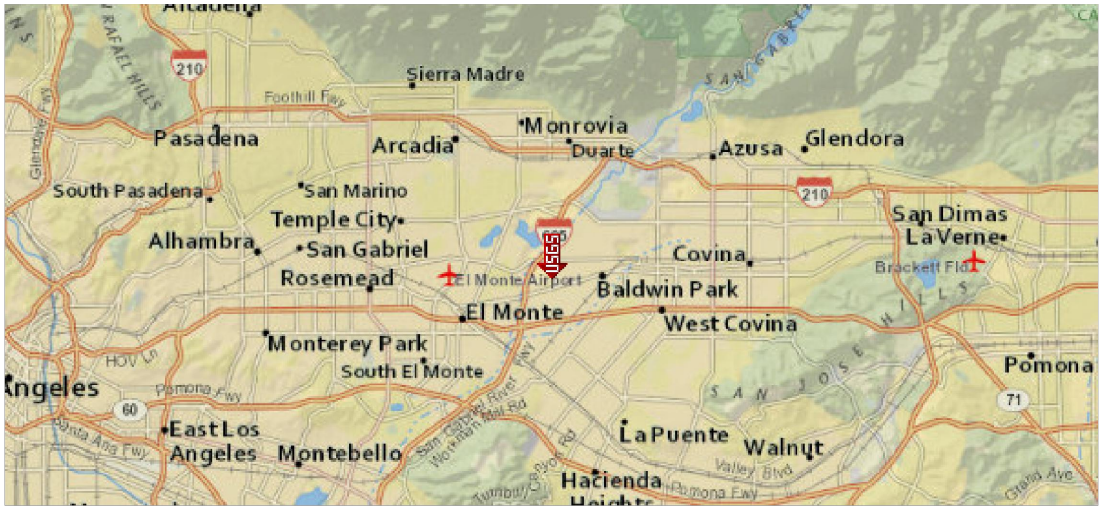
SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX E

USGS Design Maps Summary Report

User–Specified Input

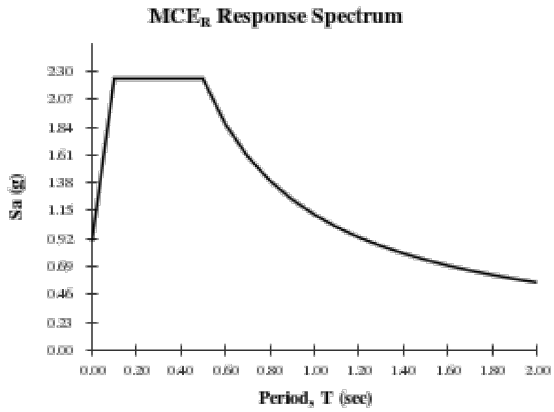
Building Code Reference Document	ASCE 7-10 Standard (which utilizes USGS hazard data available in 2008)
Site Coordinates	34.09403°N, 117.98557°W
Site Soil Classification	Site Class D – "Stiff Soil"
Risk Category	I/II/III

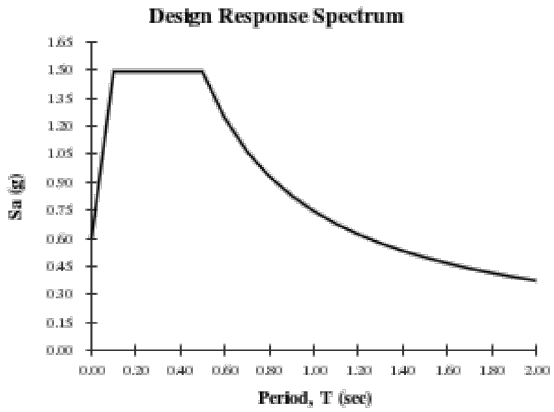


USGS–Provided Output

S_S =	2.239 g	S_{MS} =	2.239 g	S_{DS} =	1.493 g
S_1 =	0.745 g	S_{M1} =	1.118 g	S_{D1} =	0.745 g

For information on how the SS and S1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please return to the application and select the "2009 NEHRP" building code reference document.





SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

SEISMIC DESIGN PARAMETERS
PROPOSED WAREHOUSE
IRWINDALE, CALIFORNIA
DRAWN: AL CHKD: RGT
SCG PROJECT 18M192-1
PLATE E-1

SOUTHERN CALIFORNIA GEOTECHNICAL

Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4] PGA = 0.787

Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.787 = 0.787$ g

Table 11.8–1: Site Coefficient F_{PGA}

Site Class	Mapped MCE Geometric Mean Peak Ground Acceleration, PGA				
	PGA ≤ 0.10	PGA = 0.20	PGA = 0.30	PGA = 0.40	PGA ≥ 0.50
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.2	1.2	1.1	1.0	1.0
D	1.6	1.4	1.2	1.1	1.0
E	2.5	1.7	1.2	0.9	0.9
F	See Section 11.4.7 of ASCE 7				

Note: Use straight–line interpolation for intermediate values of PGA

For Site Class = D and PGA = 0.787 g, F_{PGA} = 1.000

Section 21.2.1.1 — Method 1 (from Chapter 21 – Site-Specific Ground Motion Procedures for Seismic Design)

From Figure 22-17 [5] C_{RS} = 0.999

From Figure 22-18 [6] C_{R1} = 1.017

SOURCE: U.S. GEOLOGICAL SURVEY (USGS)
<http://geohazards.usgs.gov/designmaps/us/application.php>

MCE PEAK GROUND ACCELERATION
PROPOSED WAREHOUSE
IRWINDALE, CALIFORNIA

DRAWN: AL
CHKD: RGT
SCG PROJECT 18M192-1
PLATE E-2

SOUTHERN CALIFORNIA GEOTECHNICAL

APPENDIX F

LIQUEFACTION EVALUATION

Project Name	Proposed Warehouse	MCE_G Design Acceleration	0.787	(g)
	Irwindale, CA	Design Magnitude	7.71	
Project Number	18G145	Historic High Depth to Groundwater	35	(ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	60	(ft)
		Borehole Diameter	6	(in)
Boring No.	B-1			

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.71)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
15.5	0	35	17.5		120		1.3	1.05	1.1	1.01	0.85	0.0	0.0	2100	2100	2100	0.96	0.99	1	0.06	N/A	N/A	N/A	Above Water Table
39.5	35	37	36	50	120		1.3	1.05	1.3	0.94	1	83.7	83.7	4320	4258	4320	0.90	0.92	0.79	2.00	1.45	0.47	3.12	Non-Liquefiable
39.5	37	42	39.5	81	120		1.3	1.05	1.3	1.20	1	172.1	172.1	4740	4459	4740	0.88	0.92	0.78	2.00	1.43	0.48	2.97	Non-Liquefiable
44.5	42	47	44.5	50	120		1.3	1.05	1.3	0.92	1	81.6	81.6	5340	4747	5340	0.86	0.92	0.76	2.00	1.40	0.50	2.80	Non-Liquefiable
49.5	47	50	48.5	50	120		1.3	1.05	1.3	0.91	1	80.7	80.7	5820	4978	5820	0.85	0.92	0.75	2.00	1.37	0.51	2.70	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	18G145
Engineer	DWN

Boring No. B-1

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
15.5	0	35	17.5	0.0	0.0	0.0	N/A	0.50	0.95	0.00	35.00		0.000		0.00	Above Water Table
39.5	35	37	36	83.7	0.0	83.7	3.12	0.00	-4.54	0.00	2.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	172.1	0.0	172.1	2.97	0.00	-13.29	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	81.6	0.0	81.6	2.80	0.00	-4.34	0.00	5.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Volumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	Proposed Warehouse	MCE_G Design Acceleration	0.787	(g)
	Irwindale, CA	Design Magnitude	7.71	
Project Number	18G145	Historic High Depth to Groundwater	35	(ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	60	(ft)
		Borehole Diameter	6	(in)
Boring No.	B-2			

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.71)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
15.5	0	35	17.5		120		1.3	1.05	1.1	1.01	0.85	0.0	0.0	2100	2100	2100	0.96	0.99	1	0.06	N/A	N/A	N/A	Above Water Table
39.5	35	37	36	50	120		1.3	1.05	1.3	0.94	1	83.7	83.7	4320	4258	4320	0.90	0.92	0.79	2.00	1.45	0.47	3.12	Non-Liquefiable
39.5	37	42	39.5	50	120		1.3	1.05	1.3	0.93	1	82.8	82.8	4740	4459	4740	0.88	0.92	0.78	2.00	1.43	0.48	2.97	Non-Liquefiable
44.5	42	47	44.5	50	120		1.3	1.05	1.3	0.92	1	81.6	81.6	5340	4747	5340	0.86	0.92	0.76	2.00	1.40	0.50	2.80	Non-Liquefiable
49.5	47	50	48.5	50	120		1.3	1.05	1.3	0.91	1	80.7	80.7	5820	4978	5820	0.85	0.92	0.75	2.00	1.37	0.51	2.70	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	18G145
Engineer	DWN

Boring No. B-2

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
15.5	0	35	17.5	0.0	0.0	0.0	N/A	0.50	0.95	0.00	35.00		0.000		0.00	Above Water Table
39.5	35	37	36	83.7	0.0	83.7	3.12	0.00	-4.54	0.00	2.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	82.8	0.0	82.8	2.97	0.00	-4.46	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	81.6	0.0	81.6	2.80	0.00	-4.34	0.00	5.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Volumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

LIQUEFACTION EVALUATION

Project Name	Proposed Warehouse	MCE_G Design Acceleration	0.787	(g)
	Irwindale, CA	Design Magnitude	7.71	
Project Number	18G145	Historic High Depth to Groundwater	35	(ft)
Engineer	DWN	Depth to Groundwater at Time of Drilling	60	(ft)
		Borehole Diameter	6	(in)
Boring No.	B-3			

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	Uncorrected SPT N-Value	Unit Weight of Soil (pcf)	Fines Content (%)	Energy Correction	C_B	C_S	C_N	Rod Length Correction	$(N_1)_{60}$	$(N_1)_{60CS}$	Overburden Stress (σ_o) (psf)	Eff. Overburden Stress (Hist. Water) (σ_o') (psf)	Eff. Overburden Stress (Curr. Water) (σ_o') (psf)	Stress Reduction Coefficient (r_d)	MSF	Ks	Cyclic Resistance Ratio (M=7.5)	Cyclic Resistance Ratio (M=7.71)	Cyclic Stress Ratio Induced by Design Earthquake	Factor of Safety	Comments
							(1)	(2)	(3)	(4)	(5)	(6)	(7)				(8)	(9)	(10)	(11)	(12)	(13)		
15.5	0	35	17.5		120		1.3	1.05	1.1	1.01	0.85	0.0	0.0	2100	2100	2100	0.96	0.99	1	0.06	N/A	N/A	N/A	Above Water Table
39.5	35	37	36	50	120		1.3	1.05	1.3	0.94	1	83.7	83.7	4320	4258	4320	0.90	0.92	0.79	2.00	1.45	0.47	3.12	Non-Liquefiable
39.5	37	42	39.5	50	120		1.3	1.05	1.3	0.93	1	82.8	82.8	4740	4459	4740	0.88	0.92	0.78	2.00	1.43	0.48	2.97	Non-Liquefiable
44.5	42	47	44.5	50	120		1.3	1.05	1.3	0.92	1	81.6	81.6	5340	4747	5340	0.86	0.92	0.76	2.00	1.40	0.50	2.80	Non-Liquefiable
49.5	47	50	48.5	50	120		1.3	1.05	1.3	0.91	1	80.7	80.7	5820	4978	5820	0.85	0.92	0.75	2.00	1.37	0.51	2.70	Non-Liquefiable

Notes:

(1) Energy Correction for N_{90} of automatic hammer to standard N_{60}

(2) Borehole Diameter Correction (Skempton, 1986)

(3) Correction for split-spoon sampler with room for liners, but liners are absent, (Seed et al., 1984, 2001)

(4) Overburden Correction, Caluclated by Eq. 39 (Boulanger and Idriss, 2008)

(5) Rod Length Correction for Samples <10 m in depth

(6) N-value corrected for energy, borehole diameter, sampler with absent liners, rod length, and overburden

(7) N-value corrected for fines content per Eqs. 75 and 76 (Boulanger and Idriss, 2008)

(8) Stress Reduction Coefficient calculated by Eq. 22 (Boulanger and Idriss, 2008)

(9) Magnitude Scaling Factor calculated by Eqns. A.8 & A.10 (Boulanger and Idriss, 2014)

(10) Overburden Correction Factor calcuated by Eq. 54 (Boulanger and Idriss, 2008)

(11) Calcuated by Eq. 70 (Boulanger and Idriss, 2008)

(12) Calcuated by Eq. 72 (Boulanger and Idriss, 2008)

(13) Calcuated by Eq. 25 (Boulanger and Idriss, 2008)

LIQUEFACTION INDUCED SETTLEMENTS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	18G145
Engineer	DWN

Boring No. B-3

Sample Depth (ft)	Depth to Top of Layer (ft)	Depth to Bottom of Layer (ft)	Depth to Midpoint (ft)	$(N_1)_{60}$	DN for fines content	$(N_1)_{60\text{-}CS}$	Liquefaction Factor of Safety	Limiting Shear Strain γ_{min}	Parameter Fα	Maximum Shear Strain γ_{max}	Height of Layer		Vertical Reconsolidation Strain ε_v		Total Deformation of Layer (in)	Comments
				(1)	(2)	(3)	(4)	(5)	(6)	(7)			(8)			
15.5	0	35	17.5	0.0	0.0	0.0	N/A	0.50	0.95	0.00	35.00		0.000		0.00	Above Water Table
39.5	35	37	36	83.7	0.0	83.7	3.12	0.00	-4.54	0.00	2.00		0.000		0.00	Non-Liquefiable
39.5	37	42	39.5	82.8	0.0	82.8	2.97	0.00	-4.46	0.00	5.00		0.000		0.00	Non-Liquefiable
44.5	42	47	44.5	81.6	0.0	81.6	2.80	0.00	-4.34	0.00	5.00		0.000		0.00	Non-Liquefiable
											Total Deformation (in)				0.00	

Notes:

(1) $(N_1)_{60}$ calculated previously for the individual layer

(2) Correction for fines content per Equation 76 (Boulanger and Idriss, 2008)

(3) Corrected $(N_1)_{60}$ for fines content

(4) Factor of Safety against Liquefaction, calculated previously for the individual layer

(5) Calcuated by Eq. 86 (Boulanger and Idriss, 2008)

(6) Calcuated by Eq. 89 (Boulanger and Idriss, 2008)

(7) Calcuated by Eqs. 90, 91, and 92 (Boulanger and Idriss, 2008)

(8) Volumetric Strain Induced in a Liquefiable Layer, Calcuated by Eq. 96 (Boulanger and Idriss, 2008)
(Strain N/A if Factor of Safety against Liquefaction > 1.3)

APPENDIX G

Low Impact Development Report

LOW IMPACT DEVELOPMENT (LID)

FOR

DUKE WAREHOUSE
13131 LOS ANGELES STREET
IRWINDALE, CA 91706
APNs: 8535-020-007

PREPARED FOR:

DUKE REALTY 13131 LA STREET, LP
200 SPECTRUM CENTER DRIVE, SUITE 1600
IRVINE, CA 92618
PHONE: (949) 797-7000
FAX: (949) 797-7080
CONTACT: CHRIS BURNS

NOVEMBER 27, 2019

JOB NO. 3665

PREPARED BY:

THIENES ENGINEERING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PHONE: (714) 521-4811
FAX: (714) 521-4173
CONTACT: LUIS PRADO (luisp@thieneseng.com)

LOW IMPACT DEVELOPMENT (LID)

FOR

"DUKE WAREHOUSE"

PREPARED BY LUIS PRADO
UNDER THE SUPERVISION OF:

11/27/2019

REINHARD STENZEL — DATE
R.C.E. 56155
EXP. 12/31/2020

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APPENDICES

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Appendix B LID Site Plan
Appendix C BMP Operation and Maintenance
Appendix D Maintenance and Covenant Agreement
Appendix E Educational Materials
Appendix F Infiltration Report

1.0 Project Description

The project site is located at 13131 Los Angeles Street, Irwindale (Figure 1.1 - Vicinity Map), at APN 8535-020-007, of Los Angeles County. The project site encompasses approximately 24.90 acres. Proposed improvements consist of one commercial type building of 520,310 square feet. There will be a truck yard on the north and west sides of the proposed building. Vehicle parking lots and drive aisles will be located on the south and east sides. There will be landscaping along the property lines and scattered throughout the site.

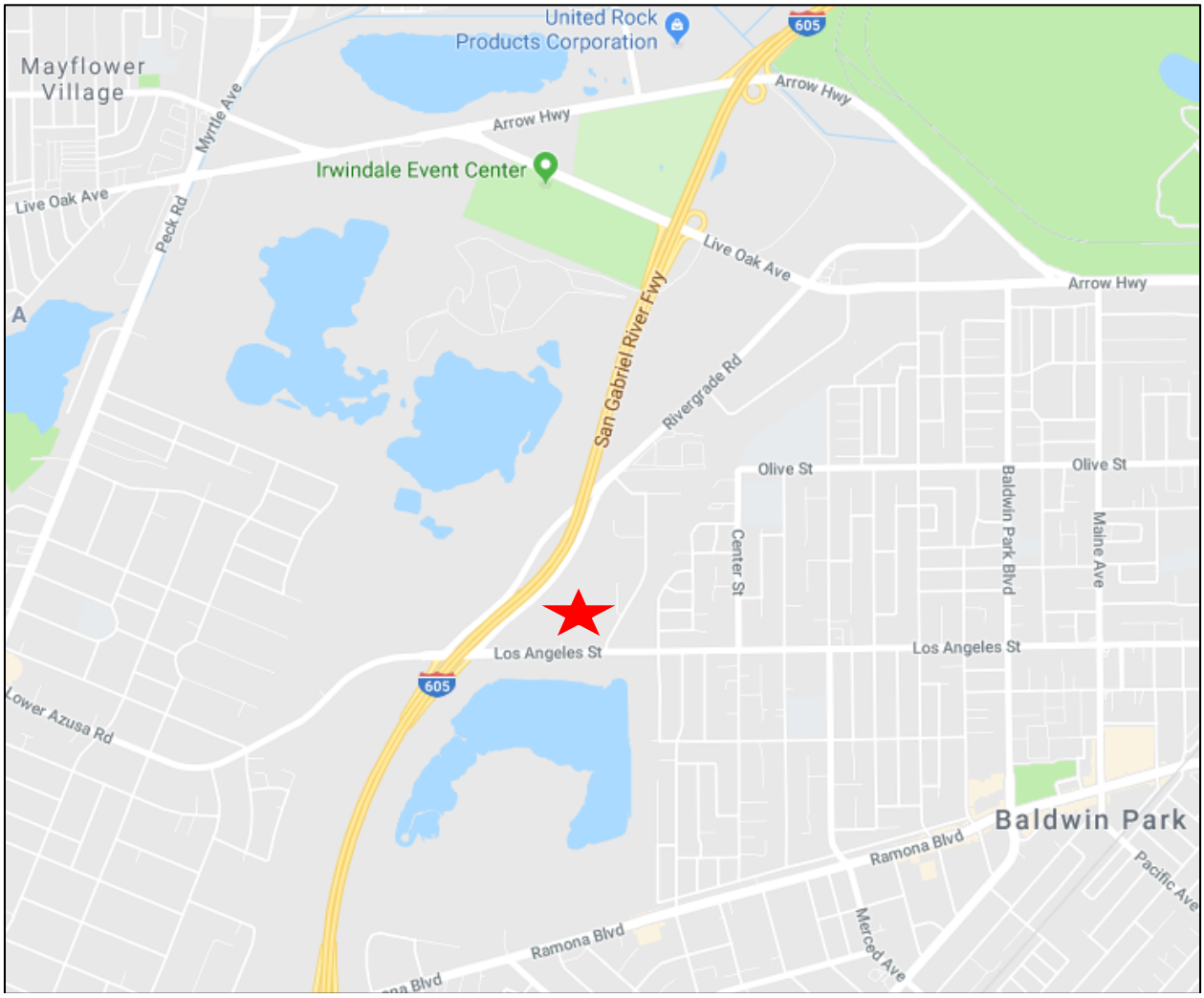


Figure 1.1 - Vicinity Map (North ↑)

The proposed project is required to incorporate appropriate stormwater mitigation measures into the design plan for the entire site and specifically for parking lots. The project will infiltrate the Storm Water Quality Design Volume (SWQDv) runoff generated by the project through the use of an underground CMP system.

1.1 Existing Site Description

The project site is currently developed with several warehouse type buildings, small office buildings, and paved parking lots.

The northerly portion of the site surface drains south-westerly to Rivergrade Road. Runoff is then conveyed further south-westerly in Rivergrade Road to several City-maintained street catch basins.

The south-easterly portion of the project site surface drains southerly to a City-maintained catch basin in Los Angeles Street. Runoff is then conveyed further south via a 36-inch storm drain to a detention basin within a quarry facility south of Los Angeles Street.

The south-westerly portion of the project site surface drains southerly to Los Angeles Street. Runoff is then conveyed westerly to a County-maintained street catch basin in Los Angeles Street tributary to Project 445 – Line B.

1.2 Proposed Site Description

The northerly entry driveway and adjacent frontage landscape (Subarea 1A, 0.50 acres) surface drain north-westerly to Rivergrade Road. Runoff is then conveyed south-westerly in Rivergrade Road to several existing City-maintained street catch basins.

Most of the project site's remaining areas are tributary to the existing City-maintained street catch basin in Los Angeles Street fronting the site, via proposed onsite storm drain system (Subareas 10B-17B, 23.70 acres) and surface flow (Subarea 18B, 0.35 acres).

Specifically for the proposed onsite storm drain system, runoffs from the northeast quarter of the proposed building (Subarea 10A, 3.20 acres) and the northerly truck yard (Subareas 11B-12B, 4.30 acres) will be conveyed westerly via the proposed storm drain Line "B" to a catch basin in Subarea 13B, which accepts runoffs from the northwest corner of the proposed building and the north half of the westerly truck yard (Subarea 13B, 7.10 acres) via surface flow. Similarly, runoffs from the southwest corner of the proposed building and the south half of the westerly truck yard (Subarea 14B, 4.90 acres) will be conveyed northerly via the proposed storm drain Line "C" to the same catch basin in Subarea 13B. From there, runoffs will be conveyed southerly via the proposed storm drain Line "A" to the existing City-maintained catch basin in Los Angeles Street. Line "A" also accepts runoffs from the south-westerly parking lot (Subarea 15B, 0.40 acres), southerly parking lot (Subarea 16B, 0.65 acres), and the southeast corner of the proposed building (Subarea 17B, 3.15 acres).

Lastly, the project site's south-westerly frontage driveway (Subarea 20C, 0.35 acres) will surface flow southerly to Los Angeles Street, then westerly to the existing County-maintained street catch basin.

1.3 Geological Investigation

The soil types, as found in the Los Angeles County Hydrology Manual, are 007 and 008 for Hanford Gravelly Sandy Loam and Hanford Silt Loam, respectively. The site-specific infiltration report, provided in Appendix F, recommended an infiltration rate of 20.0 in/hr. This rate is suitable for infiltration facilities.

2.0 Project Specific Requirements

The project is a redevelopment project that is replacing 5,000 square feet or more of impervious surface area on an already developed site. This redevelopment results in an increase of more than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to LID requirements. The design standards apply to the entire development. It also has provision applicable to individual priority project categories for parking lots.

2.1 Peak Storm Water Runoff Discharge Rates

Post-development peak stormwater runoff discharge rates shall not exceed the estimated pre-development rate for developments where the increased peak stormwater discharge rate will result in increased potential for downstream erosion.

The proposed condition 50-year peak flow rates from the project site to the City maintained catch basins in Rivergrade Road and Los Angeles Street are higher than the existing condition rates. Detention in the onsite truck yards will be utilized to reduce proposed condition discharge to below existing condition discharge.

The proposed onsite storm drains will be sized during the project site's final design phase to restrict outflow to the desirable discharge rates.

See hydrology report for more details (per separate document).

2.2 Conserve Natural Areas

During the subdivision design and approval process, the site layout must be consistent with the applicable General Plan and Local Area Plan policies and implement the following:

- *Concentrate or cluster development on portions of the site while leaving the remaining land in a natural undisturbed condition;*
- *Limit clearing and grading of native vegetation at the site to the minimum amount needed to build lots, allow access, and provide fire protection;*
- *Maximize trees and other vegetation at the site by planting additional vegetation, clustering tree areas, and promoting the use of native and/or drought tolerant plants;*
- *Promote natural vegetation by using parking lot islands and other landscaped areas;*
- *Preserve riparian areas and wetlands.*

The property was fully developed with no natural areas to conserve. The proposed project will increase the number of trees and vegetation currently onsite.

2.3 Minimize Storm Water Pollutants of Concern

Stormwater runoff from a site has the potential to contribute oil and grease, suspended solids, metals, gasoline, pesticides, and pathogens to the stormwater conveyance system. The development must be designed so as to minimize, to the maximum extent practicable, the introduction of pollutants of concern that may result in significant impacts, generated from site runoff of directly connected impervious areas (DCIA), to the stormwater conveyance system as approved by the building official. Pollutants of concern, consist of any pollutants that exhibit one or more of the following characteristics: current loadings or historic deposits of the pollutant are impacting the beneficial uses of a receiving water, elevated levels of the pollutant are found in sediments of a receiving water and/or have the potential to bioaccumulate in organisms therein, or the detectable inputs of the pollutant are at concentrations or loads considered potentially toxic to humans and/or flora and fauna.

In meeting this specific requirement, "minimization of the pollutants of concern" will require the incorporation of a BMP or combination of BMPs best suited to maximize the reduction of pollutant loadings in that runoff to the Maximum Extent Practicable.

Anticipated pollutants generated from the proposed development are:

- Heavy Metals
- Nutrients
- Pesticides
- Sediments
- Trash & Debris
- Oxygen Demanding Substances
- Oil and Grease

The receiving waters are and their impairments are:

- San Gabriel River, Reach 3: Indicator Bacteria
- San Gabriel River, Reach 2: Cyanide, Lead
- San Gabriel River, Reach 1: pH, Temperature (water),
- San Gabriel River Estuary: Copper, Dioxin, Indicator Bacteria, Nickel, Oxygen (Dissolved)
- Alamitos Bay: Indicator Bacteria, Oxygen (dissolved)
- San Pedro Bay Near/Off Shore Zones: Chlordane, PCBs (Polychlorinatedbiphenyls), Total DDT, Toxicity
- Pacific Ocean: None

The pollutants of concern of the project site are:

- Heavy Metals
- Bacteria
- Trash and debris

An underground CMP system will be utilized to treat the SWQDv. The grated inlets will have a low flow pipe with and invert elevation set at the bottom of the basin which will be used to direct the SWQDv into the CMP. Once the CMP are full, a high flow pipe, invert elevation set at top of low flow pipe, will take stormwater greater than the 85th percentile into the mainline.

2.4 Protect Slopes and Channels

Project plans must include BMPs consistent with local codes and ordinances and the SUSMP to decrease the potential of slopes and/or channels from eroding and impacting stormwater runoff:

- *Convey runoff safely from the tops of slopes and stabilize disturbed slopes.*
- *Utilize natural drainage systems to the maximum extent practicable.*
- *Control or reduce or eliminate flow to natural drainage systems to the maximum extent practicable.*
- *Stabilize permanent channel crossings.*
- *Vegetate slopes with native or drought tolerant vegetation.*
- *Install energy dissipaters, such as riprap, at the outlets of new storm drains, culverts, conduits, or channels that enter unlined channels in accordance with applicable specifications to minimize erosion, with the approval of all agencies with jurisdiction, e.g., the U.S. Army Corps of Engineers and the California Department of Fish and Game.*

The proposed project site is located on a flat terrain. There are no slopes, natural drainage systems, or channel crossings to protect.

2.5 Provide Storm Drain System Stenciling and Signage

Storm drain stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets. The stencil contains a brief statement that prohibits the dumping of improper materials into the stormwater conveyance system. Graphical icons, either illustrating anti-dumping symbols or images of receiving water fauna, are effective supplements to the anti-dumping message.

- *All storm drain inlets and catch basins within the project area must be stenciled with prohibitive language (such as: "NO DUMPING – DRAINS TO OCEAN") and/or graphical icons to discourage illegal dumping.*
- *Signs and prohibitive language and/or graphical icons, which prohibit illegal dumping, must be posted at public access points along channels and creeks within the project area.*
- *Legibility of stencils and signs must be maintained.*

All proposed and any existing inlets to remain will be stenciled with prohibitive language and/or graphical icons to prevent dumping. Legibility of the stencils/markers will be maintained on a yearly basis, or as needed.

2.6 Properly Design Outdoor Material Storage Areas

Outdoor material storage areas refer to storage areas or storage facilities solely for the storage of materials. Improper storage of materials outdoors may provide an opportunity for toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to enter the stormwater conveyance system. Where proposed project plans include outdoor areas for storage of materials that may contribute pollutants to the stormwater conveyance system, the following Structural or Treatment BMPs are required:

- *Materials with the potential to contaminate stormwater must be: (1) placed in an enclosure such as, but not limited to, a cabinet, shed, or similar structure that prevents contact with runoff or spillage to the stormwater conveyance system; or (2) protected by secondary containment structures such as berms, dikes, or curbs.*
- *The storage area must be paved and sufficiently impervious to contain leaks and spills.*
- *The storage area must have a roof or awning to minimize collection of stormwater within the secondary containment area.*

There are no proposed outdoor material storage areas for this project. Any and all materials will be stored indoors.

2.7 Properly Design Trash Storage Areas

A trash storage area refers to an area where a trash receptacle or receptacles are located for use as a repository for solid wastes. Loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. All trash container areas must meet the following Structural or Treatment Control BMP requirements (individual single family residences are exempt from these requirements):

- *Trash container areas must have drainage from adjoining roofs and pavement diverted around the area(s).*
- *Trash container areas must be screened or walled to prevent off-site transport of trash.*

Trash enclosures will be located away from roof drainage. The bin's lid will remain close when not in use and will be walled off to prevent transport by wind and contact with rainfall.

2.8 Provide Proof of Ongoing BMP Maintenance

Improper maintenance is one of the most common reasons why water quality controls will not function as designed or which may cause the system to fail entirely. It is important to consider who will be responsible for maintenance of a permanent BMP, and what equipment is required to perform the maintenance properly. If Structural or Treatment Control BMPs are required or included in project plans, the applicant must provide verification of maintenance provisions through such means as may be appropriate, including, but not limited to legal agreements, covenants, CEQA mitigation requirements and/or Conditional Use Permits.

The verification will include the developer's signed statement, as part of the project application, accepting responsibility for all Structural and Treatment Control BMP maintenance until the time the property is transferred and, where applicable, a signed agreement from the public entity assuming responsibility for Structural or Treatment Control BMP maintenance. The transfer of property to a private or public owner must have conditions requiring the recipient to assume responsibility for maintenance of any Structural or Treatment Control BMP to be included in the sales or lease agreement for that property, and will be the owner's responsibility. The condition of transfer shall include a provision that the property owners conduct maintenance inspection of all Structural or Treatment Control BMPs at least once a year and retain proof of inspection. For residential properties where the Structural or Treatment Control BMPs are located within a common area, which will be maintained by a homeowner's association, language regarding the responsibility for maintenance must be included in the project's conditions, covenants and restrictions (CC&Rs). Printed educational materials will be required to accompany the first deed transfer to highlight the existence of the requirement and to provide information on what stormwater management facilities are present, signs that maintenance is needed, how the necessary maintenance can be performed, and assistance that the Permittee can provide. The transfer of this information shall also be required with any subsequent sale of the property.

Structural or Treatment Control BMPs located within a public area proposed for transfer will be the responsibility of the developer until accepted for transfer by the appropriate public agency. Structural or Treatment Control BMPs proposed for transfer must meet design standards adopted by the public entity for the BMP installed and should be approved by the appropriate public agency prior to its installation.

The property owner/operator will maintain proof of ongoing maintenance at the site as recorded in the covenant and agreement (see Appendix D).

2.9 Design Standards for Structural or Treatment Controls BMPs

The following categories of Planning Priority Projects are required to design and implement post-construction treatment controls to mitigate stormwater pollution:

a) *Single-family hillside residential developments of one acre or more of surface area;*
b) *Housing developments (includes single family homes, multifamily homes, condominium, and apartments) of ten units or more;*
c) *A 43,560 square feet or more impervious surface area industrial/commercial development;*
d) *Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534 and 7536-7538) [5,000 square feet or more of surface area];*
e) *Retail gasoline outlets [5,000 square feet or more of impervious surface area and with projected Average Daily Traffic (ADT) of 100 or more vehicles]. Subsurface Treatment Control BMPs which may endanger public safety (i.e., create an explosive environment) are considered not appropriate;*
f) *Restaurants (SIC 5812) [5,000 square feet or more of surface area];*
g) *Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces;*

h) Projects located in, adjacent to or discharging directly to an ESA that meet the following threshold conditions:
   (1) Discharge stormwater and urban runoff that is likely to impact a sensitive biological species or habitat; and
   (2) Create 2,500 square feet or more of impervious surface area.
i) Redevelopment projects in subject categories that meet Redevelopment thresholds.

An underground CMP system will be utilized to treat the SWQDv. The grated inlets will have a low flow pipe with and invert elevation set at the bottom of the basin which will be used to direct the SWQDv into the CMP. Once the CMP are full, a high flow pipe, invert elevation set at top of low flow pipe, will take stormwater greater than the 85th percentile into the mainline.

2.10 Provisions Applicable to Individual Priority Project Categories

2.10.A Single Family Hillside Home

The project site is not a single family hillside development.

2.10.A.1 Conserve Natural Areas

The project site is not a single family hillside development.

2.10.A.2 Protect Slopes and Channels

The project site is not a single family hillside development.

2.10.A.3 Provide Storm Drain System Stenciling and Signage

The project site is not a single family hillside development.

2.10.A.4 Divert Roof Runoff to Vegetated Areas Before Discharge

The project site is not a single family hillside development.

2.10.A.5 Direct Surface Flow to Vegetated Areas Before Discharge

The project site is not a single family hillside development.

2.10.B 43,560 Square Feet Industrial/Commercial Developments

2.10.B.1 Properly Design Loading/Unloading Dock Areas

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- *Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.*
- *Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.*

The proposed project will construct several loading docks. The concrete surface is designed to minimize run-on to the loading docks and will be treated by underground CMP system.

2.10.B.2 Properly Design Repair/Maintenance Bays

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- *Repair/maintenance bays must be indoors or designed in such a way that do not allow storm water run-on or contact with storm water runoff.*
- *Design a repair/maintenance bay drainage system to capture all washwater, leaks and spills. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.*

Not applicable, the proposed project will not include any repair or maintenance bays.

2.10.B.3 Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the stormwater conveyance system. Project plans are required to designate an area for washing/steam cleaning of vehicles and equipment. This area is required to be:

- *Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permitted disposal facility.*

Not applicable, the proposed project will not include any vehicle/equipment wash areas.

2.10.C Restaurants

2.10.C.1 Properly Design Equipment/Accessory Wash Areas

The activity of outdoor equipment/accessory washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for the washing/steam cleaning of equipment and accessories. This area must be:

- *Self-contained, equipped with a grease trap, and properly connected to a sanitary sewer.*

- *If the wash area is to be located outdoors, it must be covered, paved, have secondary containment, and be connected to the sanitary sewer.*

The proposed project is not a restaurant.

2.10.D Retail Gasoline Outlets

2.10.D.1 Properly Design Fueling Area

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

- *The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.*
- *The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.*
- *The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable.*
- *At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.*

The proposed project is not a retail gasoline outlet.

2.10.E Automotive Repair Shops

2.10.E.1 Properly Design Fueling Area

Fueling areas have the potential to contribute oil and grease, solvents, car battery acid, coolant and gasoline to the storm water conveyance system. The project plans must include the following BMPs:

- *The fuel dispensing area must be covered with an overhanging roof structure or canopy. The canopy's minimum dimensions must be equal to or greater than the area within the grade break. The canopy must not drain onto the fuel dispensing area, and the canopy downspouts must be routed to prevent drainage across the fueling area.*
- *The fuel dispensing area must be paved with Portland cement concrete (or equivalent smooth impervious surface), and the use of asphalt concrete shall be prohibited.*
- *The fuel dispensing area must have a 2% to 4% slope to prevent ponding, and must be separated from the rest of the site by a grade break that prevents run-on of storm water to the extent practicable.*

- *At a minimum, the concrete fuel dispensing area must extend 6.5 feet (2.0 meters) from the corner of each fuel dispenser, or the length at which the hose and nozzle assembly may be operated plus 1 foot (0.3 meter), whichever is less.*

The proposed project is not an automotive repair shop.

2.10.E.2 Properly Design Repair/Maintenance Bays

Oil and grease, solvents, car battery acid, coolant and gasoline from the repair/maintenance bays can negatively impact storm water if allowed to come into contact with storm water runoff. Therefore, design plans for repair bays must include the following:

- *Repair/maintenance bays must be indoors or designed in such a way that doesn't allow storm water run-on or contact with storm water runoff.*
- *Design a repair/maintenance bay drainage system to capture all wash-water, leaks and spills.*
- *Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.*

The proposed project is not an automotive repair shop.

2.10.E.3 Properly Design Vehicle/Equipment Wash Areas

The activity of vehicle/equipment washing/steam cleaning has the potential to contribute metals, oil and grease, solvents, phosphates, and suspended solids to the storm water conveyance system. Include in the project plans an area for washing/steam cleaning of vehicles and equipment. This area must be:

- *Self-contained and/or covered, equipped with a clarifier, or other pretreatment facility, and properly connected to a sanitary sewer or to a permitted disposal facility.*

The proposed project is not an automotive repair shop.

2.10.E.4 Properly Design Loading/Unloading Dock Areas

Loading/unloading dock areas have the potential for material spills to be quickly transported to the storm water conveyance system. To minimize this potential, the following design criteria are required:

- *Cover loading dock areas or design drainage to minimize run-on and runoff of storm water.*
- *Direct connections to storm drains from depressed loading docks (truck wells) are prohibited.*

The proposed project is not an automotive repair shop.

2.10.F Parking Lots

2.10.F.1 Properly Design Parking Area

Parking lots contain pollutants such as heavy metals, oil and grease, and polycyclic aromatic hydrocarbons that are deposited on parking lot surfaces by motor-vehicles. These pollutants are directly transported to surface waters. To minimize the offsite transport of pollutants, the following design criteria are required:

- *Reduce impervious land coverage of parking areas.*
- *Infiltrate runoff before it reaches storm drain system.*
- *Treat runoff before it reaches storm drain system.*

The proposed project is designed so that pollutants from the impervious surfaces are disconnected prior to discharging offsite. Runoff from the parking lots are transported through a drain insert and an underground CMP system for infiltration.

2.10.F.2 Properly Design to Limit Oil Contamination and Perform Maintenance

Parking lots may accumulate oil, grease, and water insoluble hydrocarbons from vehicle drippings and engine system leaks.

- *Treat to remove oil and petroleum hydrocarbons at parking lots that are heavily used (e.g. fast food outlets, lots with 25 or more parking spaces, sports event parking lots, shopping malls, grocery stores, discount warehouse stores).*
- *Ensure adequate operation and maintenance of treatment systems particularly sludge and oil removal, and system fouling and plugging prevention control.*

The project owner will ensure that grease and oil are contained. The parking lot will be swept on a monthly basis, minimum, and before any rain events. Absorbent materials will be used to collect any spilled oil, and disposed of properly, to ensure they do not contaminate stormwater. Drain inserts will be used at all proposed onsite inlets and collect drainage from impervious areas prior to flowing through the underground CMP system for infiltration. Hydrocarbon booms from the drain inserts are highly effective in the removal of hydrocarbons.

2.11 Waiver

A Permittee may, through adoption of an ordinance or code incorporating the treatment requirements of the SUSMP, provide for a waiver from the requirement if impracticability for a specific property can be established. A waiver of impracticability shall be granted only when all other Structural or Treatment Control BMPs have been considered and rejected as infeasible. Recognized situations of impracticability include, (i) extreme limitations of space for treatment on a redevelopment project, (ii) unfavorable or unstable soil conditions at a site to attempt infiltration, and (iii) risk of ground water contamination because a known unconfined aquifer lies beneath the land surface or an existing or potential underground source of drinking water is

less than 10 feet from the soil surface. Any other justification for impracticability must be separately petitioned by the Permittee and submitted to the Regional Board for consideration. The Regional Board may consider approval of the waiver justification or may delegate the authority to approve a class of waiver justifications to the Regional Board Executive Officer. The supplementary waiver justification becomes recognized and effective only after approval by the Regional Board or the Regional Board Executive Officer. A waiver granted by a Permittee to any development or redevelopment project may be revoked by the Regional Board Executive Officer for cause and with proper notice upon petition.

The proposed project does not require a waiver of impracticability from any LID conditions.

2.12 Mitigation Funding

The Permittees may propose a management framework, for endorsement by the Regional Board Executive Officer, to support regional or sub-regional solutions to storm water pollution, where any of the following situations occur:

- *A waiver for impracticability is granted;*
- *Legislative funds become available;*
- *Off-site mitigation is required because of loss of environmental habitat; or*
- *An approved watershed management plan or a regional storm water mitigation plan exists that incorporates an equivalent or improved strategy for storm water mitigation.*

No management framework for mitigation funding is necessary for the proposed project.

Funding will be the responsibility of the owner:

DUKE REALTY 13131 LA STREET, LP
200 SPECTRUM CENTER DRIVE, SUITE 1600
IRVINE, CA 92618
PHONE: (949) 797-7000
FAX: (949) 797-7080
CONTACT: CHRIS BURNS

2.13 Limitation on Use of Infiltration BMPs

Three factors significantly influence the potential for storm water to contaminate ground water. They are (i) pollutant mobility, (ii) pollutant abundance in storm water, (iii) and soluble fraction of pollutant. The risk of contamination of groundwater may be reduced by pretreatment of storm water. A discussion of limitations and guidance for infiltration practices is contained in, Potential Groundwater Contamination from Intentional and Non-Intentional Stormwater Infiltration, Report No. EPA/600/R-94/051, USEPA (1994).

In addition, the distance of the groundwater table from the infiltration BMP may also be a factor determining the risk of contamination. A water table distance separation of ten feet depth in

California presumptively poses negligible risk for storm water not associated with industrial activity or high vehicular traffic.

Infiltration BMPs are not recommended for areas of industrial activity or areas subject to high vehicular traffic (25,000 or greater average daily traffic (ADT) on main roadway or 15,000 or more ADT on any intersecting roadway) unless appropriate pretreatment is provided to ensure groundwater is protected and the infiltration BMP is not rendered ineffective by overload.

See Section 1.3 of this LID report for details.

2.14 Alternative Certification for Storm Water Treatment Mitigation

In lieu of conducting detailed BMP review to verify Structural or Treatment Control BMPs adequacy, a Permittee may elect to accept a signed certification from a Civil Engineer or a Licensed Architect registered in the State of California, that the plan meets the criteria established herein. The Permittee is encouraged to verify that certifying person(s) have been trained on BMP design for water quality, not more than two years prior to the signature date. Training conducted by an organization with storm water BMP design expertise (e.g., a University, American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, or the California Water Environment Association) may be considered qualifying.

A California licensed civil engineer has provided a detailed BMP review of this report.

2.15 Resources and Reference

California Storm Water Best Management Practices Handbooks for Construction Activity (2009), Municipal (2003), and Industrial/Commercial (2003).

APPENDIX A

SWQDv Calculations

Department of Public Works
dpw.lacounty.gov

search our site..

Hydrology Map

A GIS viewer application to view the data for the hydrology manual.

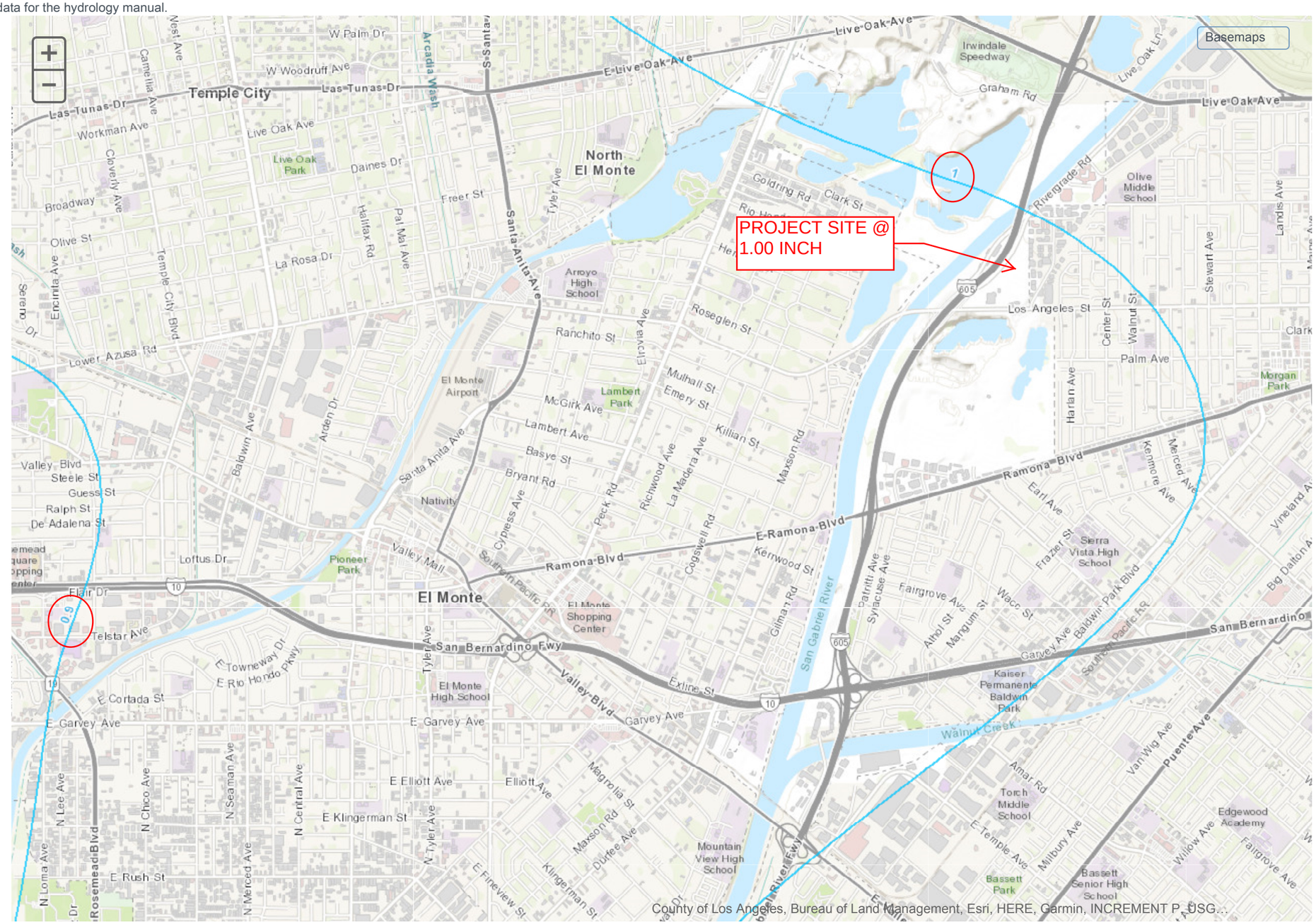
LAYERS

- [ ] 50yr Two Tenths (Rainfall)
- [ ] DPA Zones
- [ ] Soils 2004
- [x] Final 85th Percentile, 24-hr Rainfall
- [ ] Final 95th Percentile, 24-hr Rainfall
- [ ] 1-year, 1-hour Rainfall Intensity

SEARCH

Enter Address, Cross Street, or Parcel No.:
(ex: 900 S. Fremont Ave., Fremont@Valley, 5342005904)

Search



Map Tips

lacounty.gov | Public Works FAQ | Privacy / Terms of Use | Feedback |

Peak Flow Hydrologic Analysis

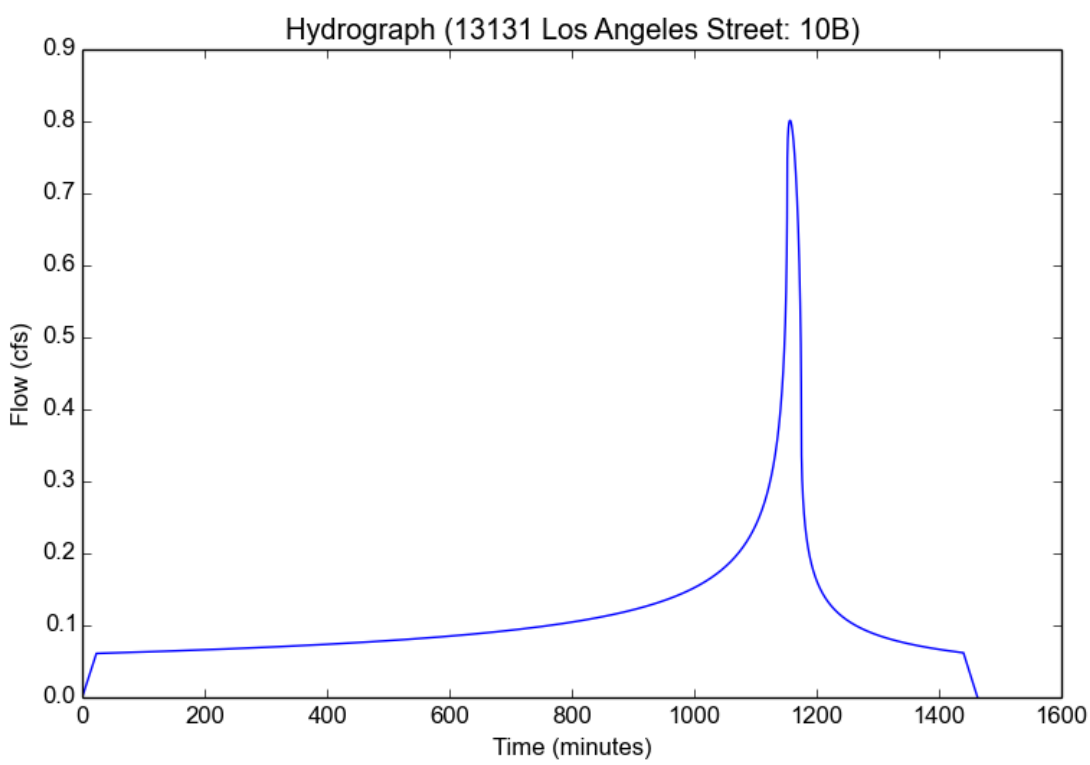
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	10B
Area (ac)	3.2
Flow Path Length (ft)	430.0
Flow Path Slope (vft/hft)	0.007
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	7
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2912
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	23.0
Clear Peak Flow Rate (cfs)	0.8014
Burned Peak Flow Rate (cfs)	0.8014
24-Hr Clear Runoff Volume (ac-ft)	0.2274
24-Hr Clear Runoff Volume (cu-ft)	9907.2666



Peak Flow Hydrologic Analysis

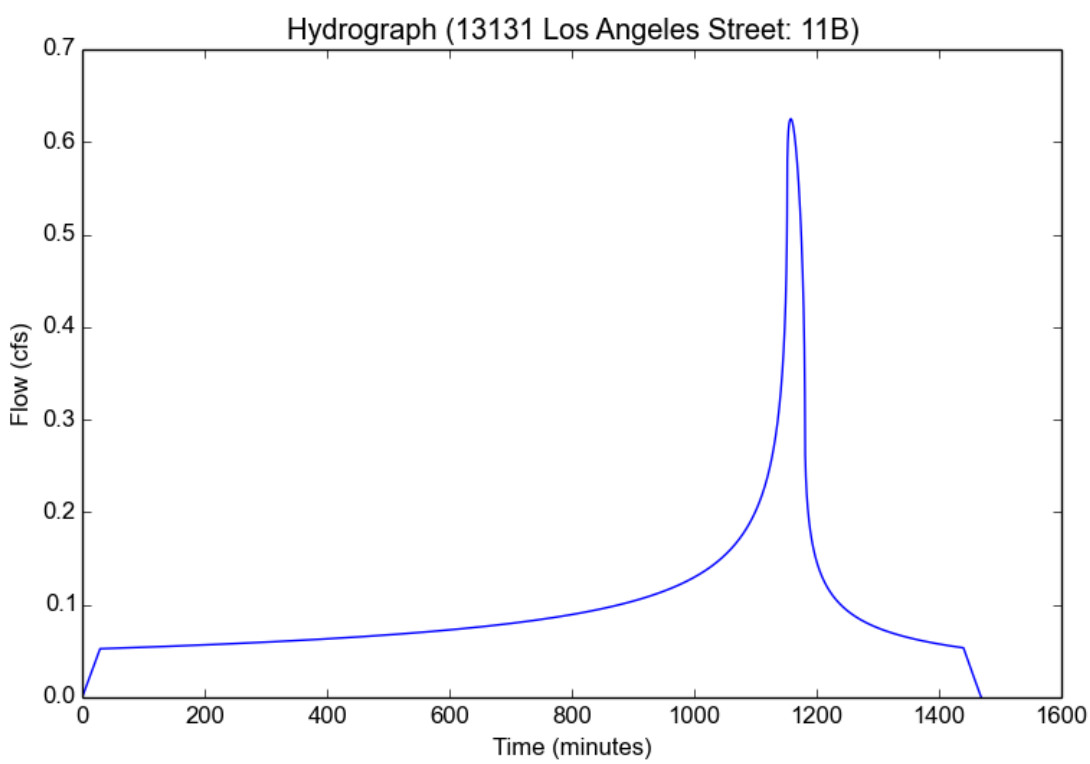
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	11B
Area (ac)	2.75
Flow Path Length (ft)	730.0
Flow Path Slope (vft/hft)	0.014
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	8
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2612
Undeveloped Runoff Coefficient (Cu)	0.3054
Developed Runoff Coefficient (Cd)	0.8703
Time of Concentration (min)	29.0
Clear Peak Flow Rate (cfs)	0.625
Burned Peak Flow Rate (cfs)	0.625
24-Hr Clear Runoff Volume (ac-ft)	0.1956
24-Hr Clear Runoff Volume (cu-ft)	8521.778



Peak Flow Hydrologic Analysis

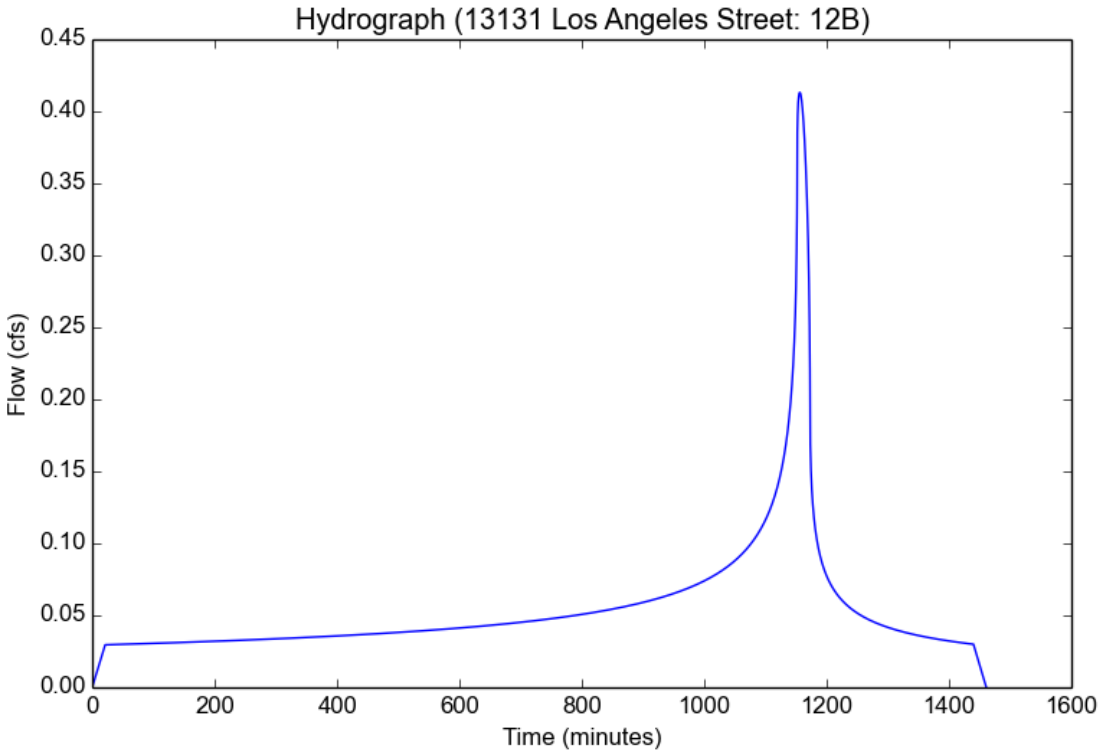
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	12B
Area (ac)	1.55
Flow Path Length (ft)	460.0
Flow Path Slope (vft/hft)	0.015
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	8
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.3039
Undeveloped Runoff Coefficient (Cu)	0.4398
Developed Runoff Coefficient (Cd)	0.877
Time of Concentration (min)	21.0
Clear Peak Flow Rate (cfs)	0.4131
Burned Peak Flow Rate (cfs)	0.4131
24-Hr Clear Runoff Volume (ac-ft)	0.1103
24-Hr Clear Runoff Volume (cu-ft)	4805.9226



Peak Flow Hydrologic Analysis

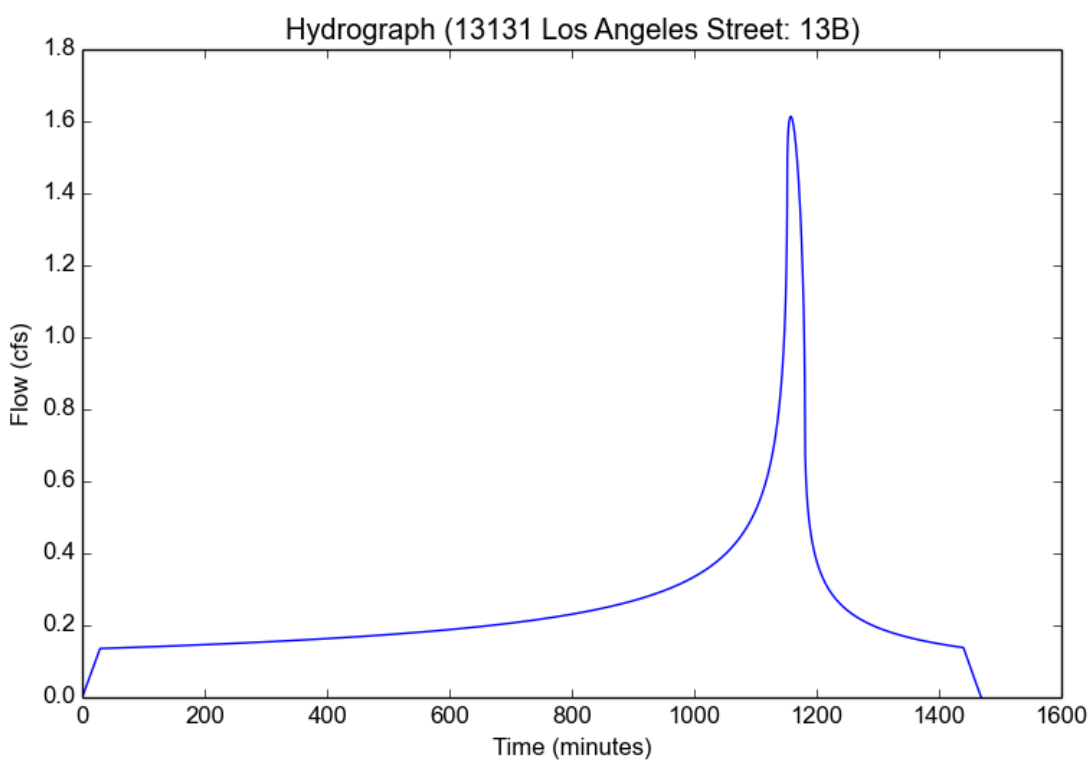
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	13B
Area (ac)	7.1
Flow Path Length (ft)	665.0
Flow Path Slope (vft/hft)	0.009
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	8
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2612
Undeveloped Runoff Coefficient (Cu)	0.3054
Developed Runoff Coefficient (Cd)	0.8703
Time of Concentration (min)	29.0
Clear Peak Flow Rate (cfs)	1.6136
Burned Peak Flow Rate (cfs)	1.6136
24-Hr Clear Runoff Volume (ac-ft)	0.5051
24-Hr Clear Runoff Volume (cu-ft)	22001.6813



Peak Flow Hydrologic Analysis

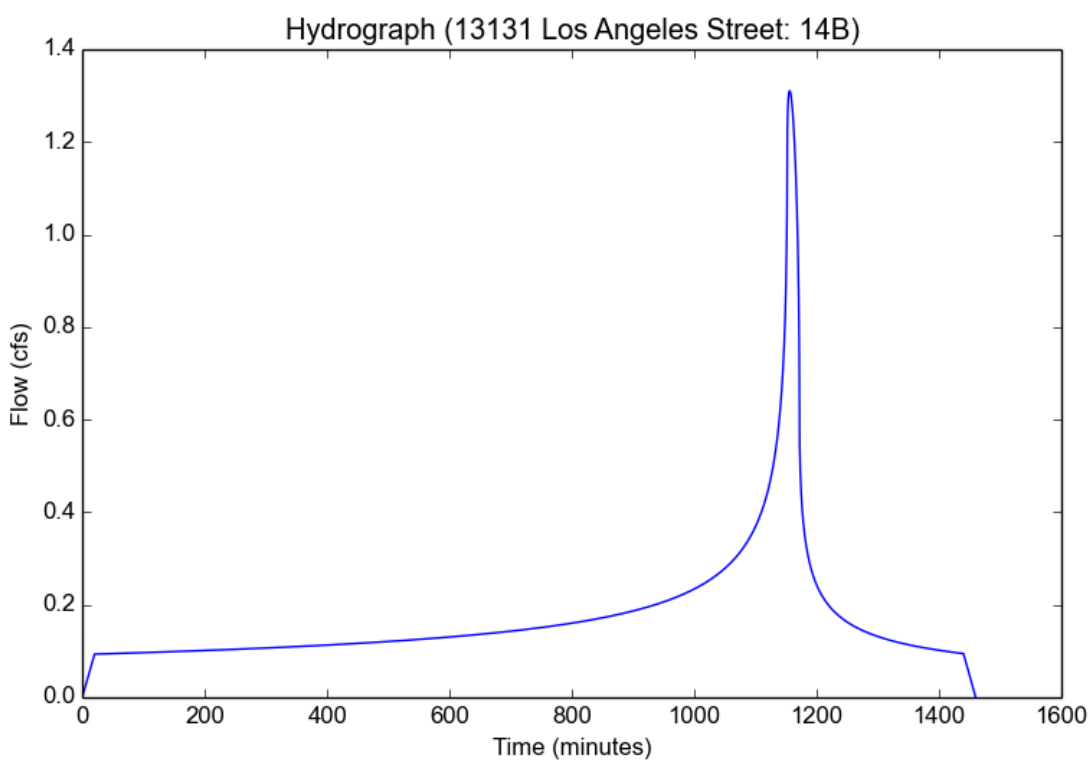
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	14B
Area (ac)	4.9
Flow Path Length (ft)	375.0
Flow Path Slope (vft/hft)	0.009
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	7
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.311
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	20.0
Clear Peak Flow Rate (cfs)	1.3105
Burned Peak Flow Rate (cfs)	1.3105
24-Hr Clear Runoff Volume (ac-ft)	0.3483
24-Hr Clear Runoff Volume (cu-ft)	15170.4769



Peak Flow Hydrologic Analysis

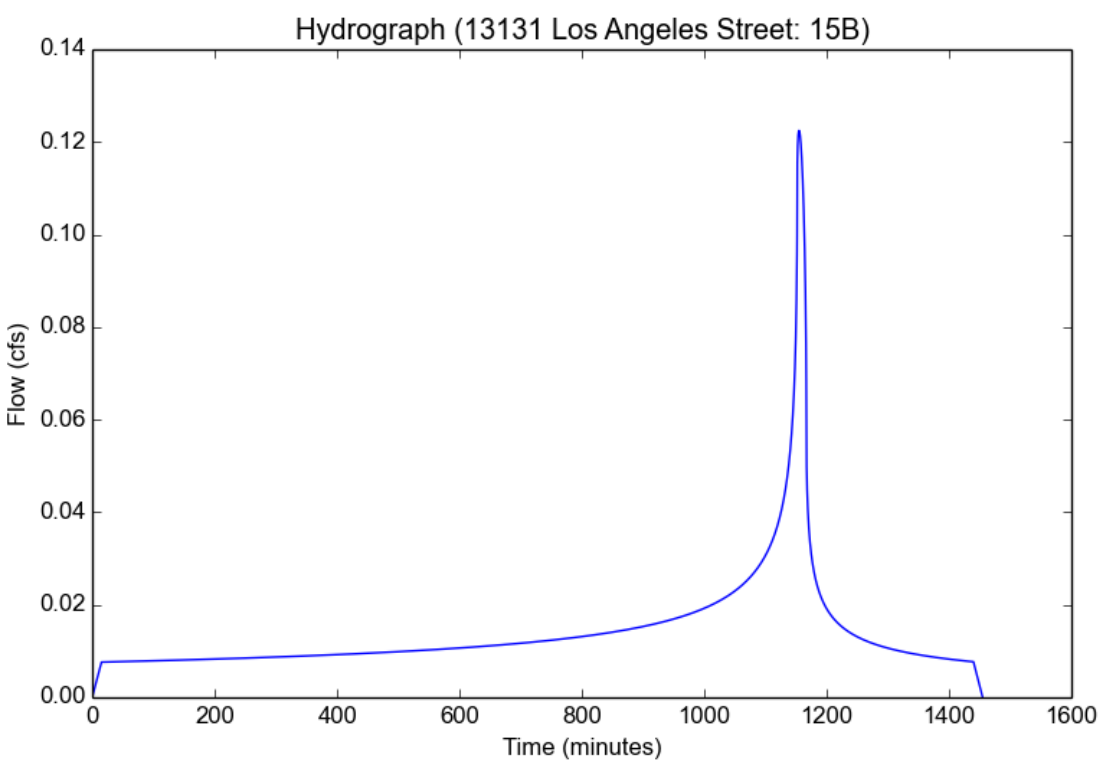
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	15B
Area (ac)	0.4
Flow Path Length (ft)	275.0
Flow Path Slope (vft/hft)	0.014
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	7
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.356
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	0.1225
Burned Peak Flow Rate (cfs)	0.1225
24-Hr Clear Runoff Volume (ac-ft)	0.0284
24-Hr Clear Runoff Volume (cu-ft)	1238.4035



Peak Flow Hydrologic Analysis

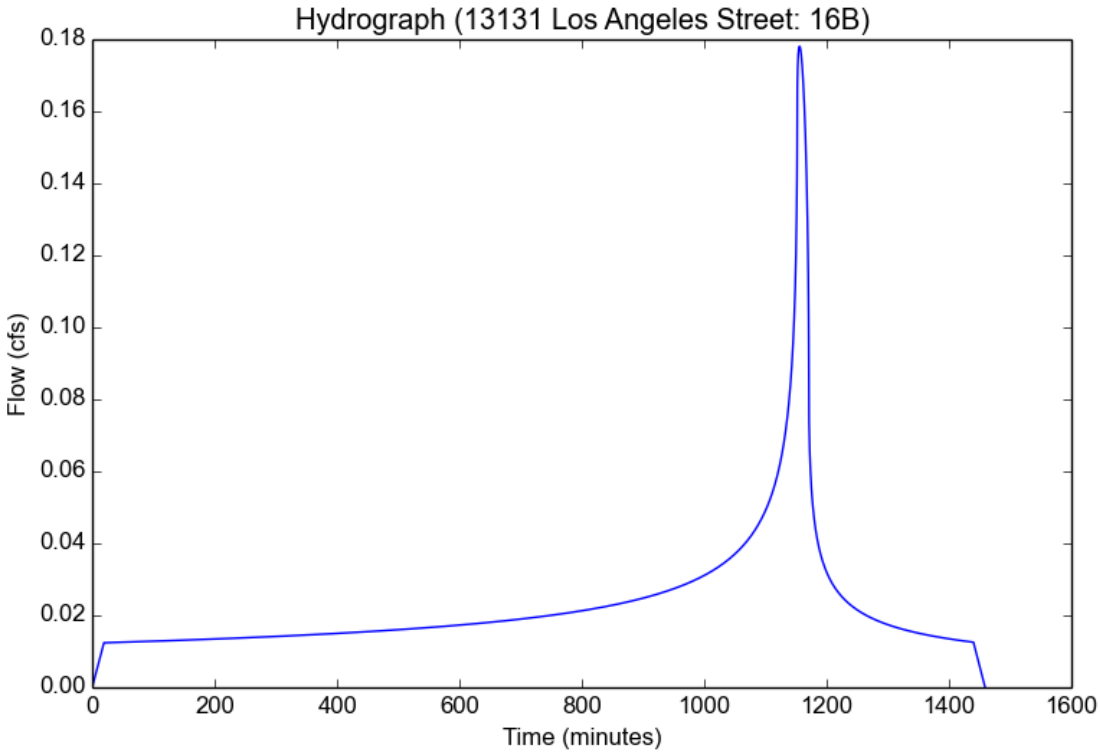
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	16B
Area (ac)	0.65
Flow Path Length (ft)	355.0
Flow Path Slope (vft/hft)	0.012
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	7
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.3186
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	19.0
Clear Peak Flow Rate (cfs)	0.1781
Burned Peak Flow Rate (cfs)	0.1781
24-Hr Clear Runoff Volume (ac-ft)	0.0462
24-Hr Clear Runoff Volume (cu-ft)	2012.4092



Peak Flow Hydrologic Analysis

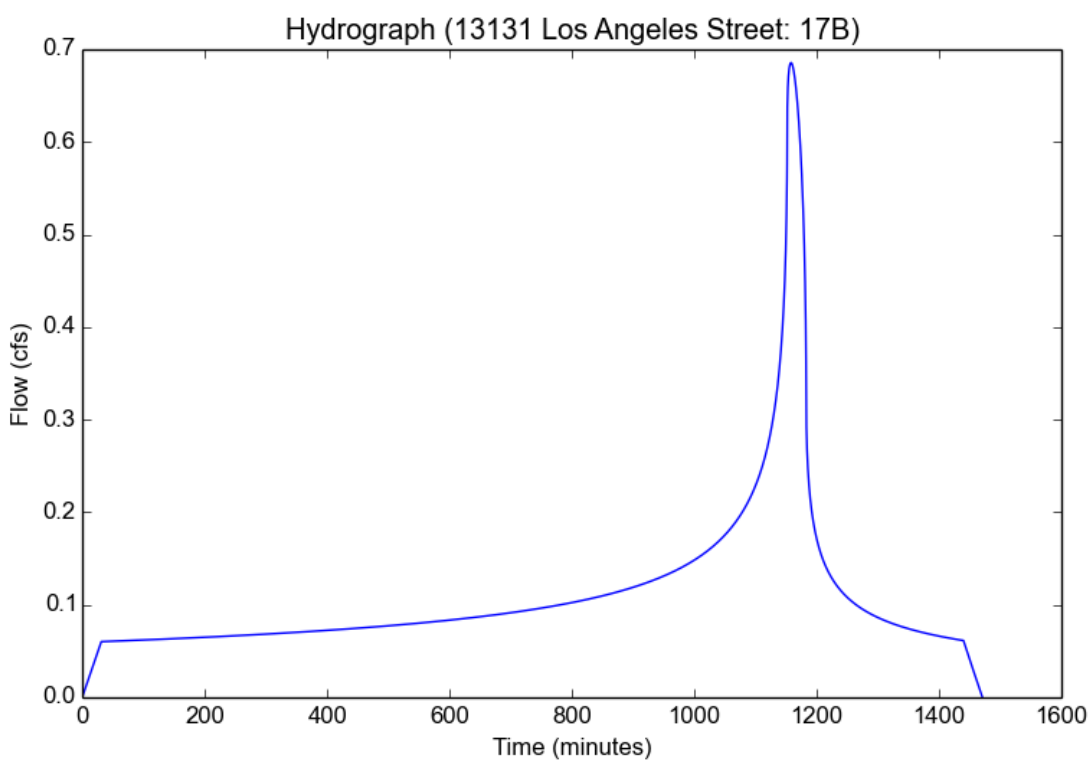
File location: O:/3600-3699/3665/SUSMP/2019-11-XX 1st Planning Submittal/Appendices/Appendix A - SWQDv/HydroCalc/13131 Los Angeles Street Re
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles Street
Subarea ID	17B
Area (ac)	3.15
Flow Path Length (ft)	770.0
Flow Path Slope (vft/hft)	0.011
85th Percentile Rainfall Depth (in)	1.0
Percent Impervious	0.95
Soil Type	7
Design Storm Frequency	85th percentile storm
Fire Factor	0
LID	True

Output Results

Modeled (85th percentile storm) Rainfall Depth (in)	1.0
Peak Intensity (in/hr)	0.2531
Undeveloped Runoff Coefficient (Cu)	0.1
Developed Runoff Coefficient (Cd)	0.86
Time of Concentration (min)	31.0
Clear Peak Flow Rate (cfs)	0.6856
Burned Peak Flow Rate (cfs)	0.6856
24-Hr Clear Runoff Volume (ac-ft)	0.2239
24-Hr Clear Runoff Volume (cu-ft)	9752.5196



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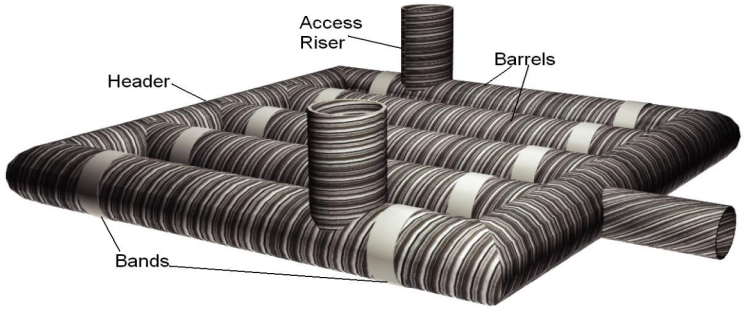
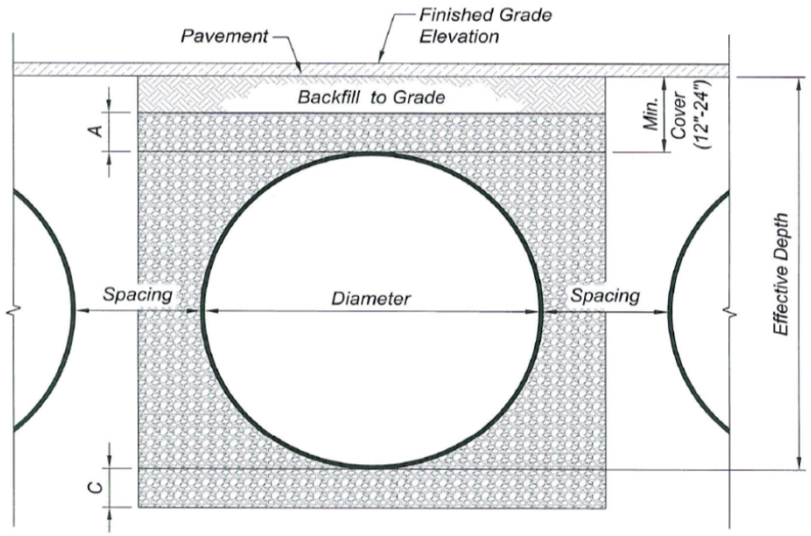


Project Summary

Date:	11/27/2019	
Project Name:	Duke Warehouse	
City / County:	Irwindale	
State:	CA	
Designed By:	Luis Prado	
Company:	Thienes Engineering Inc.	**Enter Information in Blue Cells**
Telephone:	(714) 521-4811	

Corrugated Metal Pipe Calculator

Storage Volume Required (cf):	73,411	
Limiting Width (ft):	40.00	
Invert Depth Below Asphalt (ft):	9.00	
Solid or Perforated Pipe:	Perforated	
Shape Or Diameter (in):	96	50.27 ft^2 Pipe Area
Number Of Headers:	2	
Spacing between Barrels (ft):	3.00	
Stone Width Around Perimeter of System (ft):	1	
Depth A: Porous Stone Above Pipe (in):	6	
Depth C: Porous Stone Below Pipe (in):	6	
Stone Porosity (0 to 40%):	40	



System Sizing

Pipe Storage:	54,136	cf	
Porous Stone Storage:	19,472	cf	
Total Storage Provided:	73,608	cf	100.3% Of Required Storage
Number of Barrels:	3	barrels	
Length per Barrel:	339.0	ft	
Length Per Header:	30.0	ft	
Rectangular Footprint (W x L):	32. ft x 357. ft		

CONTECH Materials

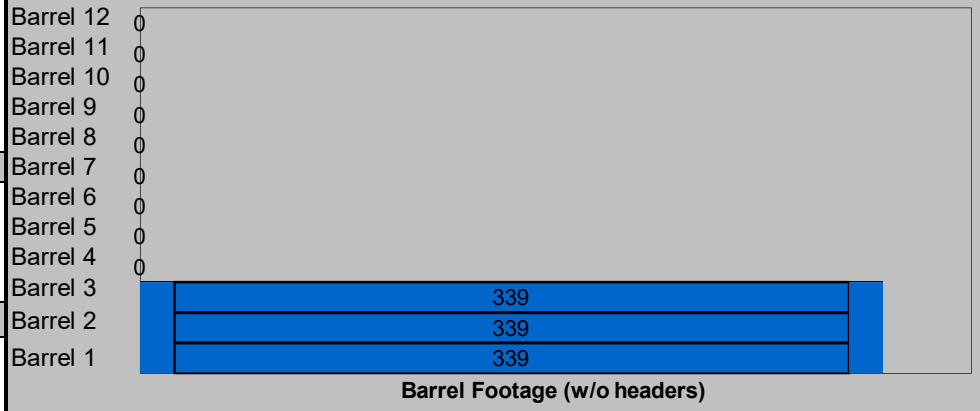
Total CMP Footage:	1,077	ft
Approximate Total Pieces:	49	pcs
Approximate Coupling Bands:	50	bands
Approximate Truckloads:	25	trucks

Construction Quantities**

Total Excavation:	3808	cy
Porous Stone Backfill For Storage:	1803	cy stone
Backfill to Grade Excluding Stone:	0	cy fill

***Construction quantities are approximate and should be verified upon final design*

System Layout



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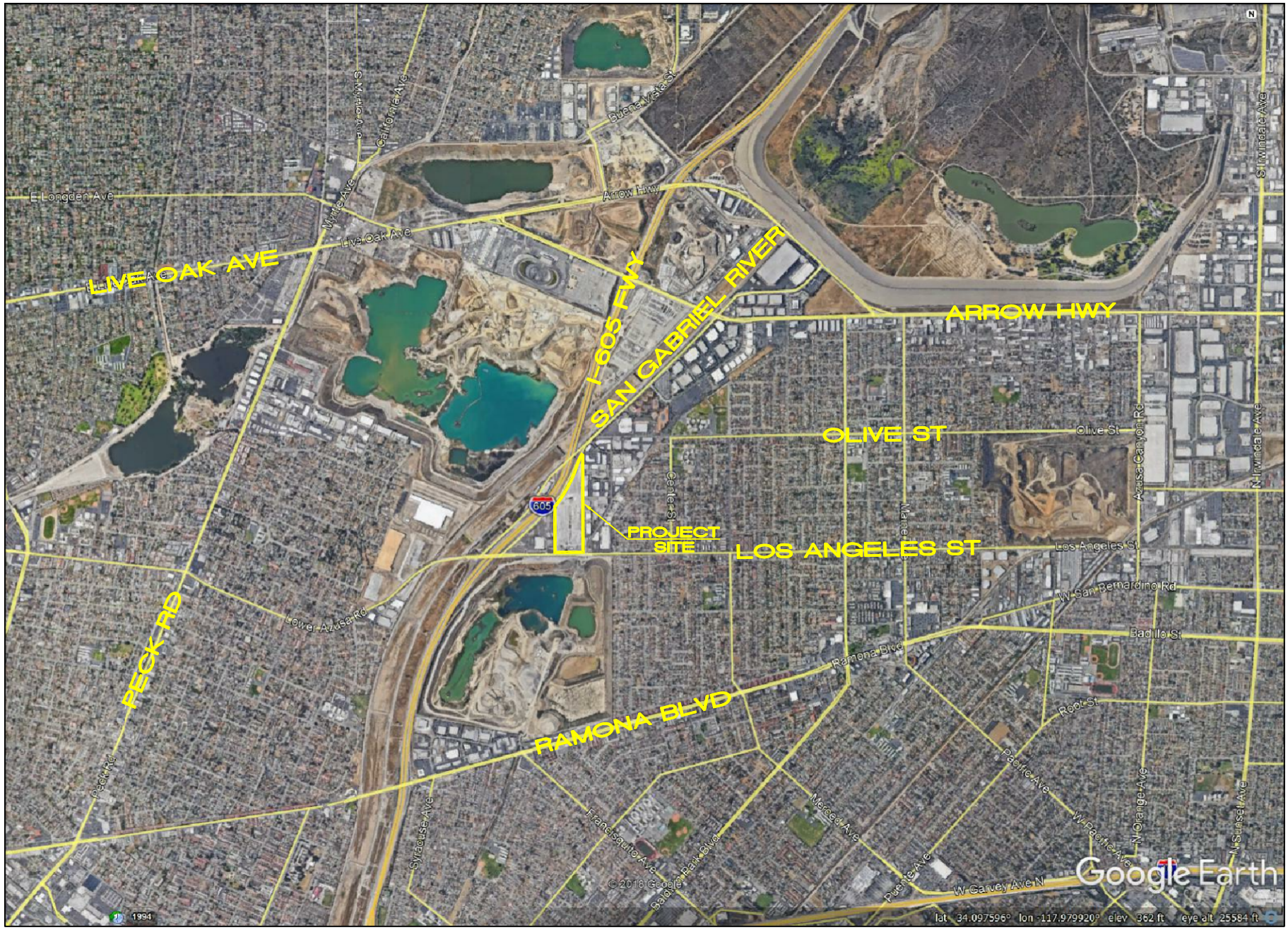
DRAWDOWN CALCULATIONS (SUBAREAS 10B-17B)

Measured infiltration rate = 20 in/hr
Safety factor = 2
Design infiltration rate = 10 in/hr
d_{max} = Design infiltration rate x 96 hours = 10 in/hr x 96 hrs = 960 inches
d_{BMP} = [(6 inches + 6 inches) x 0.40] + 96 inches = 100.8 inches
$d_{max} > d_{BMP}$

APPENDIX B

LID Site Plan



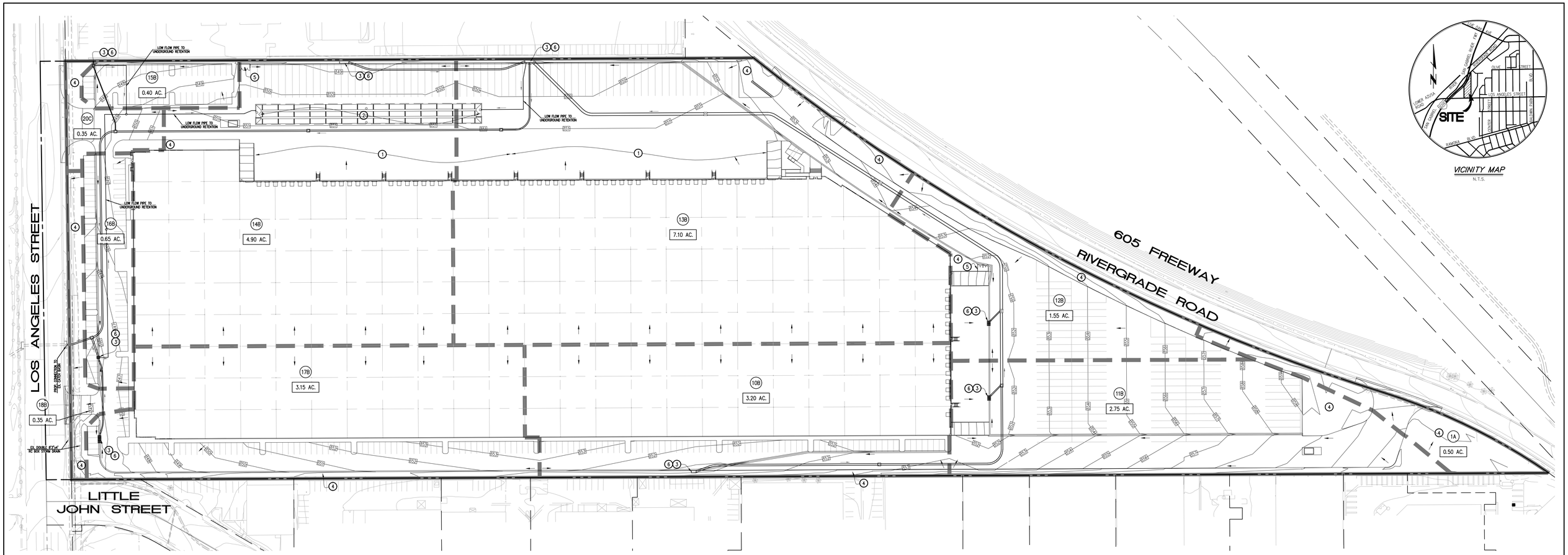
Last Update: 8/29/18
O:\3600-3699\3665\3665VicMap.dwg

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

"VICINITY MAP"

FOR

13131 LOS ANGELES STREET, IRWINDALE



BIO CLEAN SCREENING FILTER WITH TROUGH SYSTEM

FOR USE IN CURB INLETS

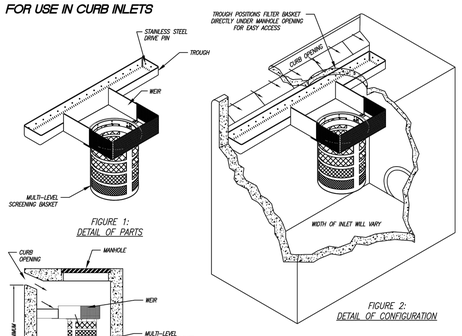


FIGURE 1: DETAIL OF PARTS

FIGURE 2: DETAIL OF CONFIGURATION

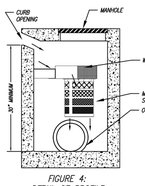


FIGURE 4: DETAIL OF PROFILE

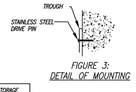


FIGURE 3: DETAIL OF MOUNTING

NOTES:

1. TROUGH SYSTEM PROVIDES FOR ENTIRE COVERAGE OF INLET OPENING SO TO DIVERT ALL FLOW TO FILTER.
2. TROUGH SYSTEM MANUFACTURED FROM MARINE GRADE FIBERGLASS, GEL COATED FOR UV PROTECTION.
3. SYSTEM ATTACHED TO THE CATCH BASIN WITH NON-CORROSIVE HARDWARE.
4. FILTER MANUFACTURED OF 100% STAINLESS STEEL.
5. FILTER MADE OF NON-CLOGGIN SCREEN WITH 4.7 MM OPENINGS AND MEETS FULL CAPTURE REQUIREMENTS.
6. FILTER CAN BE FITTED WITH HYDROCARBON ABSORBENT BOOM
7. FILTER IS LOCATED DIRECTLY UNDER THE MANHOLE FOR EASY REMOVAL AND MAINTENANCE.
8. LENGTH OF TROUGH CAN VARY FROM 2' TO 30'
9. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR MORE INFORMATION.
10. CONSIDERS A SAFETY FACTOR OF 2.0
11. BYPASS IS FACILITATED VIA OVERFLOW OF THE TROUGH SYSTEM AND IS EQUAL TO THE CAPACITY OF THE CURB OPENING
12. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.
13. ADDITIONAL TREATMENT AND STORAGE CAPACITY CAN BE ACHIEVED BY UTILIZING MULTIPLE FILTER BASKETS.

MODEL NUMBER	TREATMENT FLOW (cfs)*	SOLIDS STORAGE CAPACITY (cu ft)
BC-CURB-30	2.85	2.21
BC-CURB-24	2.85	1.77
BC-CURB-18	2.85	1.33
BC-CURB-12	2.81	0.88

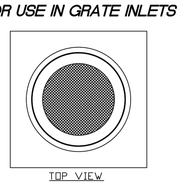
*SEE PAGE 2 FOR EXPLANATION OF FLOW RATES

DRAWING: BIO CLEAN CURB INLET FILTER DETAILS	MULTI-LEVEL SCREENING
TREATMENT FLOW RATE: 2.85 cfs	MODEL #: BC-CURB-MLS
WARRANTY: 8 YEAR MANUFACTURERS	PROJECT:
BIO CLEAN ENVIRONMENTAL SERVICES, INC. 398 VIA EL CENTRO, OCEANSIDE CA 92058 PHONE: 760-433-7640 FAX: 760-433-3176	REVISIONS: DATE: REVISIONS: DATE:
DATE: 10/12/2017 SCALE: NTS	REVISIONS: DATE: REVISIONS: DATE:
DRAWTER: M.C.P. UNITS = INCHES	PAGE 1

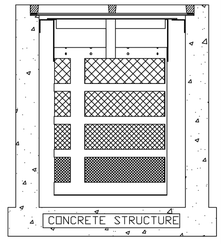
Bio Clean
A Forterra Company

BIO CLEAN SCREENING FILTER

FOR USE IN GRATE INLETS

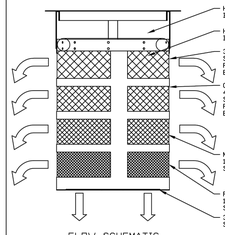


TOP VIEW



NOTES:

1. ALL HARDWARE, FLANGE, FRAME, SCREENS SHALL BE STAINLESS STEEL
2. HYDROCARBON BOOM SHALL BE 2" DIAMETER AND CONNECTED MECHANICALLY TO THE FILTER FRAME WITH RAILS ALLOWING IT TO FLOAT ON THE WATER SURFACE REGARDLESS OF HEIGHT
3. SEE PERFORMANCE REPORTS IN MANUFACTURES SPECIFICATIONS
4. OTHER STANDARD AND CUSTOM MODEL SIZES AVAILABLE – CONTACT BIO CLEAN FOR MORE INFORMATION.
5. BASED ON 37% OPEN AREA.
6. CONSIDERS A SAFETY FACTOR OF 2.0.
7. CONSIDERS A LOCAL DEPRESSION PONDING DEPTH OF 6 INCHES.
8. STORAGE CAPACITY BASED ON THE BASKET HALF FULL.



FLOW SCHEMATIC

MODEL #	TREATMENT FLOW (CFS)	BYPASS FLOW (CFS)	SOLIDS STORAGE CAPACITY (CF)
BC-GRATE-MLS 12-12-12	1.19	1.55	0.27
BC-GRATE-MLS 18-18-18	4.32	3.68	1.05
BC-GRATE-MLS 24-24-24	7.67	4.83	2.41
BC-GRATE-MLS 30-30-24	12.97	6.21	3.98
BC-GRATE-MLS 25-38-24	13.53	6.59	4.16
BC-GRATE-MLS 36-36-24	19.64	7.60	5.94
BC-GRATE-MLS 48-48-18	24.84	10.13	7.92

**FLOW RATES CALCULATED USING THE FOLLOWING EQUATION

$Q = SD * C_d * A \sqrt{2 * g * H}$ C_d = COEFFICIENT OF DISCHARGE = .62

DRAWING: BIO CLEAN GRATE INLET FILTER DETAILS	MULTI-LEVEL SCREENING
TYPICAL MODEL DETAIL	
WARRANTY: 8 YEAR MANUFACTURERS	PROJECT:
BIO CLEAN ENVIRONMENTAL SERVICES, INC. 398 VIA EL CENTRO, OCEANSIDE CA 92058 PHONE: 760-433-7640 FAX: 760-433-3176	REVISIONS: DATE: REVISIONS: DATE:
DATE: 10/12/17 SCALE: 3" = 15	REVISIONS: DATE: REVISIONS: DATE:
DRAWTER: M.C.P. UNITS = INCHES	PAGE 1

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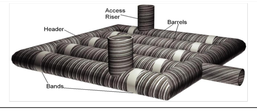
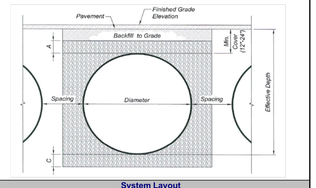
For design assistance, drawings, and pricing send completed worksheet to: dyods@contech-cpi.com

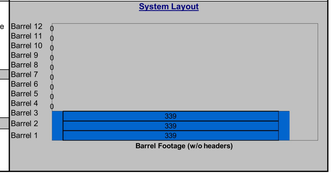
Project Summary		
Date:	11/27/2019	
Project Name:	Duke Warehouse	
City / County:	Irwindale	
State:	CA	
Designed By:	Luis Prado	
Company:	Thienes Engineering Inc.	
Telephone:	(714) 521-4811	Enter Information in Blue Cells
Corrugated Metal Pipe Calculator		
Storage Volume Required (cf):	73,411	
Limiting Width (ft):	40.00	
Invert Depth Below Asphalt (ft):	9.00	
Solid or Perforated Pipe:	Perforated	
Shape Or Diameter (in):	96	50.27 ft² Pipe Area
Number Of Headers:	2	
Spacing between Barrels (ft):	3.00	
Stone Width Around Perimeter of System (ft):	1	
Depth A: Porous Stone Above Pipe (in):	6	
Depth B: Porous Stone Below Pipe (in):	6	
Stone Porosity (0 to 40%):	40	
System Sizing		
Pipe Storage:	54,136 cf	
Porous Stone Storage:	19,472 cf	
Total Storage Provided:	73,608 cf	100.3% Of Required Storage
Number of Barrels:	3 barrels	
Length per Barrel:	339.0 ft	
Length Per Header:	30.0 ft	
Rectangular Footprint (W x L):	32. ft x 357. ft	
CONTECH Materials		
Total CMP Footage:	1,077 ft	
Approximate Total Pieces:	49 pcs	
Approximate Coupling Bands:	50 bands	
Approximate Truckloads:	25 trucks	
Construction Quantities**		
Total Excavation:	3808 cy	
Porous Stone Backfill For Storage:	1803 cy stone	
Backfill to Grade Excluding Stone:	0 cy fill	

**Construction quantities are approximate and should be verified upon final design





System Layout



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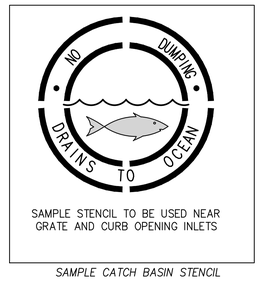
LEGEND

1. LOADING DOCKS
2. UNDERGROUND CMP RETENTION SYSTEM
3. SD-13: STORM DRAIN SYSTEM SIGNS "NO DUMPING-DRAINS TO OCEAN"
4. LANDSCAPE
5. TRASH ENCLOSURE
6. DRAIN INSERT(S)
7. NOT USED

NOTE:

RD ROOF DRAIN
BOUNDARY
DRAINAGE AREAS
FLOW LINE
SD FLOW LINE

BMP SD-13:



SAMPLE STENCIL TO BE USED NEAR GRATE AND CURB OPENING INLETS

SAMPLE CATCH BASIN STENCIL

DRAIN INSERTS

96" CMP

0 30 60 120 180

SCALE: 1"=60'

Last Update:11/27/19
O:\3600-3699\3665\3665BMPSITEMAP.dwg

PREPARED FOR:

DUKE REALTY 13131 LA STREET, LP
200 SPECTRUM CENTER DRIVE, SUITE 1600
IRVINE, CA 92618
PHONE: (949) 797-7000
FAX: (949) 797-7080

PREPARED BY:

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14,545 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

CITY OF IRWINDALE

PUBLIC WORKS DEPARTMENT

LID SITE MAP

DUKE WAREHOUSE AT 13131 LOS ANGELES STREET

Designed by _____ Approved by _____ Date _____
Date _____
Checked by _____
Date _____
Designed by _____ Public Works Director _____ R.C.E. _____
Date _____
Checked by _____
Date _____
Sheet 1 of 1 Sheets

3665/1 OF 1 SHEET

APPENDIX C

BMP Operation and Maintenance

BMP Operation and Maintenance			
BMP	**Operation/Maintenance**	**Inspection Frequency**	**Responsibility**
Storm Drain Stencil and Signage	➢ Visually inspect for legibility and replace/repaint as necessary.	Annually	Owner
Parking Lot Sweeping	➢ At a minimum, sweep on a monthly basis.	Monthly (minimum)	Owner
Underground CMP System	➢ The manholes shall be inspected semi-annually (October 1st and February 1st) and maintained upon sediment reaching 3-inches in depth. The rows shall be inspected and maintained by a qualified technician and he/she will properly dispose of all wastes. Manholes are installed in order to inspect and maintain the system. It is installed per OSHA codes to ensure operator and inspector safety.	Semi-annually (October 1st and February 1st) through maintenance service contract with the vendor or equally qualified contractor.	Owner
Drain Inserts	➢ Visually inspect for defects and illegal dumping. Notify proper authorities if illegal dumping has occurred. ➢ Using an industrial vacuum, the collected materials shall be removed from the filter basket and disposed of properly. ➢ Inspect biosorb hydrocarbon boom and replace as necessary.	Semi-annually (October 1st and February 1st) through maintenance service contract with the vendor or equally qualified contractor.	Owner
Maintenance Log	➢ Keep a log of all inspection and maintenance performed on the above mentioned BMPs for at least 5 years. Keep this log on-site.	Ongoing	Owner

Storm Drain Signage SD-13

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

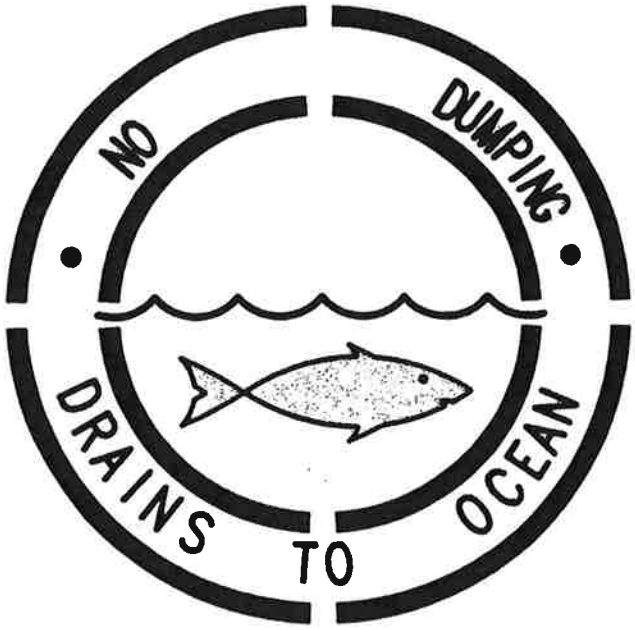
Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.



SAMPLE STENCIL TO BE USED NEAR
GRATE AND CURB OPENING INLETS
SYMBOL TO BE 24" IN DIAMETER

Thienes Engineering
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-6811 FAX(714)521-4173

SAMPLE CATCH BASIN STENCIL
PER BMP SD-13

Drain Inserts MP-52

Description

Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris. There are a multitude of inserts of various shapes and configurations, typically falling into one of three different groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are one box; that is, the setting area and filtration through media occur in the same box. Some products consist of one or more trays or mesh grates. The trays may hold different types of media. Filtration media vary by manufacturer. Types include polypropylene, porous polymer, treated cellulose, and activated carbon.

California Experience

The number of installations is unknown but likely exceeds a thousand. Some users have reported that these systems require considerable maintenance to prevent plugging and bypass.

Advantages

- Does not require additional space as inserts as the drain inlets are already a component of the standard drainage systems.
- Easy access for inspection and maintenance.
- As there is no standing water, there is little concern for mosquito breeding.
- A relatively inexpensive retrofit option.

Limitations

Performance is likely significantly less than treatment systems that are located at the end of the drainage system such as ponds and vaults. Usually not suitable for large areas or areas with trash or leaves than can plug the insert.

Design and Sizing Guidelines

Refer to manufacturer's guidelines. Drain inserts come any many configurations but can be placed into three general groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are

Design Considerations

- Use with other BMPs
- Fit and Seal Capacity within Inlet

Targeted Constituents

- ☑ Sediment
- ☑ Nutrients
- ☑ Trash
- ☑ Metals
- Bacteria
- ☑ Oil and Grease
- ☑ Organics

Removal Effectiveness

See New Development and Redevelopment Handbook-Section 5.

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one box; that is, the setting area and filtration through media occurs in the same box. One manufacturer has a double-box. Stormwater enters the first box where setting occurs. The stormwater flows into the second box where the filter media is located. Some products consist of one or more trays or mesh grates. The trays can hold different types of media. Filtration media vary with the manufacturer: types include polypropylene, porous polymer, treated cellulose, and activated carbon.

Construction/Inspection Considerations

Be certain that installation is done in a manner that makes certain that the stormwater enters the unit and does not leak around the perimeter. Leakage between the frame of the insert and the frame of the drain inlet can easily occur with vertical (drop) inlets.

Performance

Few products have performance data collected under field conditions.

Siting Criteria

It is recommended that inserts be used only for retrofit situations or as pretreatment where other treatment BMPs presented in this section area used.

Additional Design Guidelines

Follow guidelines provided by individual manufacturers.

Maintenance

Likely require frequent maintenance, on the order of several times per year.

Cost

- The initial cost of individual inserts ranges from less than $100 to about $2,000. The cost of using multiple units in curb inlet drains varies with the size of the inlet.
- The low cost of inserts may tend to favor the use of these systems over other, more effective treatment BMPs. However, the low cost of each unit may be offset by the number of units that are required, more frequent maintenance, and the shorter structural life (and therefore replacement).

References and Sources of Additional Information

Hrachovec, R., and G. Minton, 2001, Field testing of a sock-type catch basin insert, Planet CPR, Seattle, Washington

Interagency Catch Basin Insert Committee, Evaluation of Commercially-Available Catch Basin Inserts for the Treatment of Stormwater Runoff from Developed Sites, 1995

Larry Walker Associates, June 1998, NDMP Inlet/In-Line Control Measure Study Report

Manufacturers literature

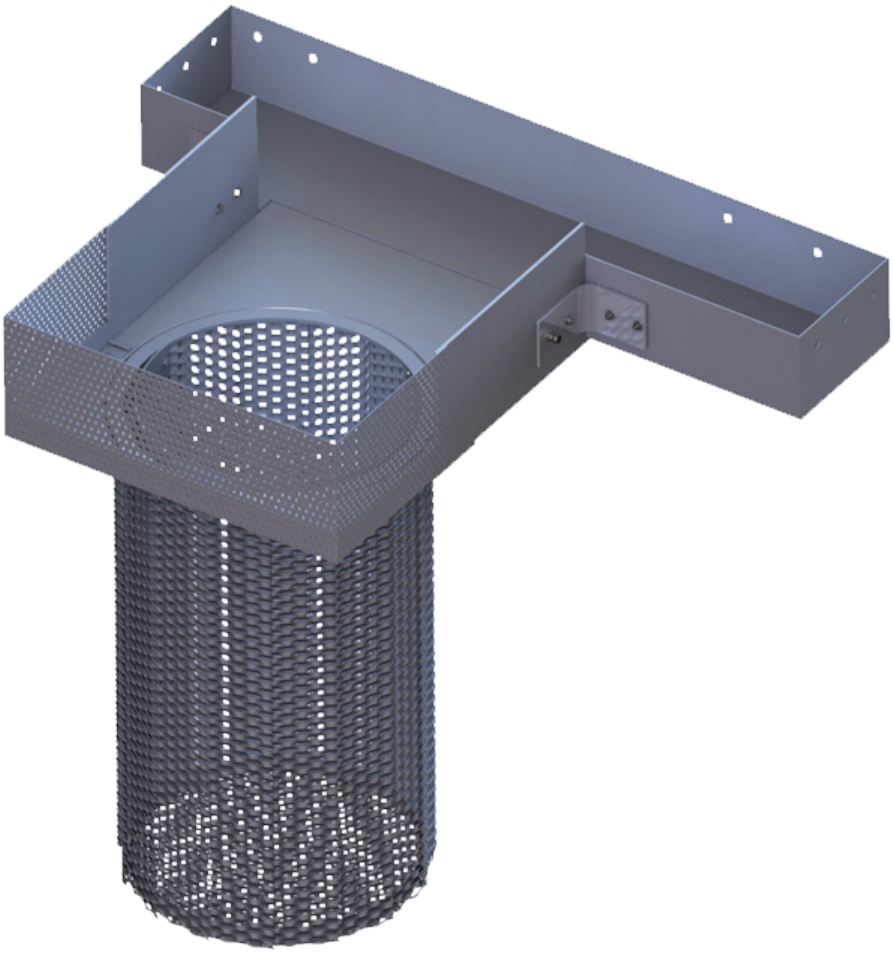
Santa Monica (City), Santa Monica Bay Municipal Stormwater/Urban Runoff Project - Evaluation of Potential Catch basin Retrofits, Woodward Clyde, September 24, 1998

Woodward Clyde, June 11, 1996, Parking Lot Monitoring Report, Santa Clara Valley Nonpoint Source Pollution Control Program.

Curb Inlet Filter

Bio Clean
A Forterra Company

OPERATION & MAINTENANCE



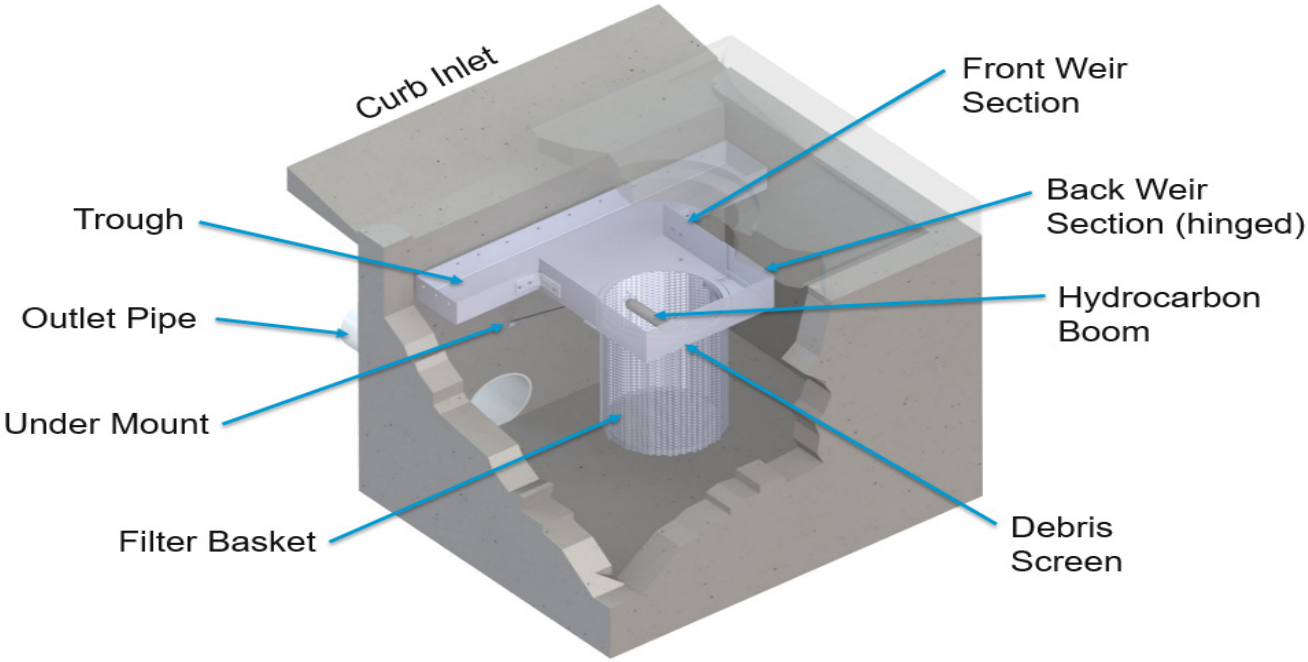
Bio Clean Environmental Services, Inc.
398 Via El Centro
Oceanside, CA 92058

www.BioCleanEnvironmental.com
p: 760.433.7640
f: 760.433.3176

OPERATION & MAINTENANCE

The Bio Clean Curb Inlet Filter is a stormwater device designed to remove high levels of trash, debris, sediments and hydrocarbons. The filter is available in several configurations including trash full capture, multi-level screening, Kraken membrane filter and media filter variations. This manual covers maintenance procedures of the trash full capture and multi-level screening configurations. A supplemental manual is available for the Kraken and media filter variations. The innovative trough & weir system is mounted along the curb face and directs incoming stormwater toward the filter basket which is positioned "directly" under the manhole access opening regardless of its location in the catch basin. This innovative design allows the filter to be cleaned from finish surface without access into the catch basin, therefore drastically reducing maintenance time and eliminating confined space entry. The filter has a lifting handle allowing for the filter to be removed easily through the manhole. The weir also folds up to allow for unimpeded access into the basin for routine maintenance or pipe jetting.

As with all stormwater BMPs, inspection and maintenance on the Curb Inlet Filter is necessary. Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess site-specific loading conditions. This is recommended because pollutant loading can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding of roads, amount of daily traffic and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years. Without appropriate maintenance a BMP can exceed its storage capacity which can negatively affect its continued performance in removing and retaining captured pollutants.



System Diagram:

Inspection Equipment

Following is a list of equipment to allow for simple and effective inspection of the Curb Inlet Filter:

- Bio Clean Environmental Inspection Form (contained within this manual).
- Manhole hook or appropriate tools to remove access hatches and covers.
- Appropriate traffic control signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections or maintenance of the system.

Inspection Steps

The core to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Curb Inlet Fitler are quick and easy. As mentioned above the first year should be seen as the maintenance interval establishment phase. During the first year more frequent inspections should occur in order to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long-term inspection and maintenance interval requirements.

The Curb Inlet Filter can be inspected though visual observation without entry into the catch basin. All necessary pre-inspection steps must be carried out before inspection occurs, such as safety measures to protect the inspector and nearby pedestrians from any dangers associated with an open access hatch or manhole. Once the manhole has been safely opened the inspection process can proceed:

- Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other info (see inspection form).
- Observe the inside of the catch basin through the manhole. If minimal light is available and vision into the unit is impaired utilize a flashlight to see inside the catch basin.
- Look for any out of the ordinary obstructions in the catch basin, trough, weir, filter basket, basin floor our outlet pipe. Write down any observations on the inspection form.
- Through observation and/or digital photographs estimate the amount of trash, foliage and sediment accumulated inside the filter basket. Record this information on the inspection form.
- Observe the condition and color of the hydrocarbon boom. Record this information on the inspection form.

- Finalize inspection report for analysis by the maintenance manager to determine if maintenance is required.

Maintenance Indicators

Based upon observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components.
- Obstructions in the trough, weir, filter basket or catch basin.
- Excessive accumulation of trash, foliage and sediment in the filter basket and/or trough and weir sections. Maintenance is required when the basket is greater than half-full.
- The following chart shows the 50% and 100% storage capacity of each filter height:

Model	Filter Basket Diameter (in)	Filter Basket Height (in)	50% Storage Capacity (cu ft)	100% Storage Capacity (cu ft)
BC-CURB-30	18	30	2.21	4.42
BC-CURB-24	18	24	1.77	3.53
BC-CURB-18	18	18	1.33	2.65
BC-CURB-12	18	12	0.88	1.77

Maintenance Equipment

It is recommended that a vacuum truck be utilized to minimize the time required to maintain the Curb Inlet Filter though it can easily cleaned by hand:

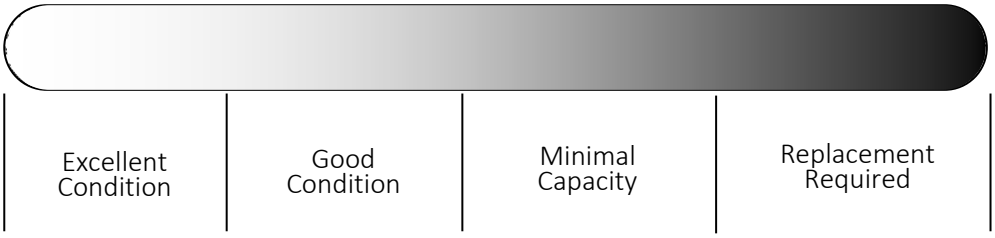
- Bio Clean Environmental Maintenance Form (contained in O&M Manual).
- Manhole hook or appropriate tools to access hatches and covers.
- Appropriate safety signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine maintenance of the system. Small or large vacuum truck (with pressure washer attachment preferred).

Maintenance Procedures

It is recommended that maintenance occurs at least two days after the most recent rain event to allow debris and sediments to dry out. Maintaining the system while flows are still entering it will increase the time and complexity required for maintenance. Cleaning of the Curb Inlet Filter can be performed from finish surface without entry into catch basin utilizing a vacuum truck. Some unique

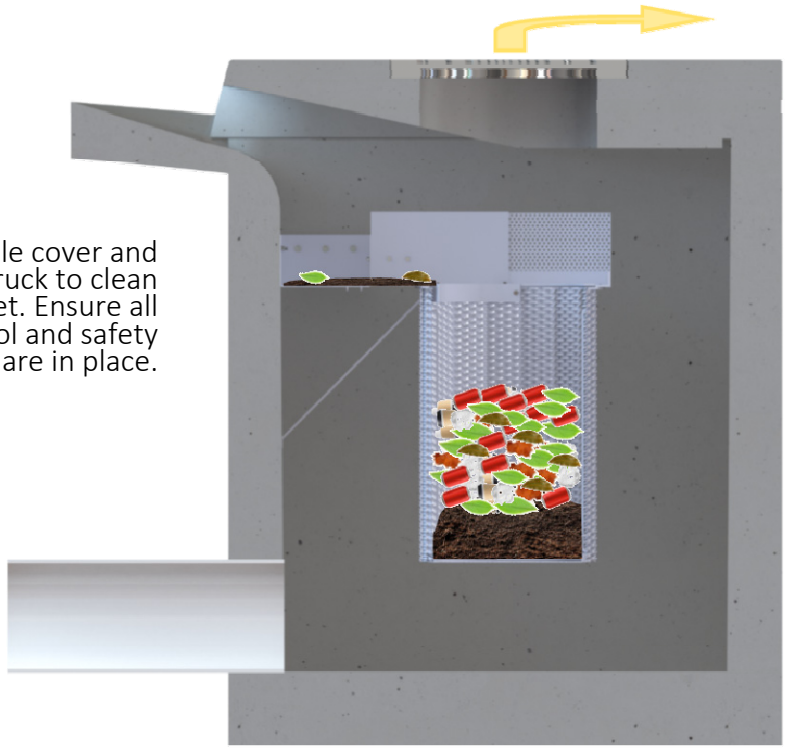
and custom configurations may create conditions which would require entry for some or all of the maintenance procedures. Once all safety measures have been set up cleaning of the Curb Inlet Filter can proceed as followed:

- Remove all manhole cover or access hatches (traffic control and safety measures to be completed prior).
- Using an extension on a vacuum truck position the hose over the opened manhole or hatch opening. Insert the vacuum hose down into the filter basket and suck out trash, foliage and sediment. A pressure wash is recommended and will assist in spraying of any debris stuck on the side or bottom of the filter basket. If the filter basket is full, trash, sediment, and debris will accumulate inside the trough and weir sections of the system. Once the filter basket is clean power wash the weir and trough pushing these debris into the filter basket (leave the hose in the filter basket during this process so entering debris will be sucked out). Power wash off the trough, weir, debris screen, and filter basket sides and bottom.
- Next remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is fastened to rails on two opposite sides of the basket (vertical rails). Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required install and fasten on a new hydrocarbon boom. Booms can be ordered directly from the manufacturer.
- Follow is a replacement indication color chart for the hydrocarbon booms:



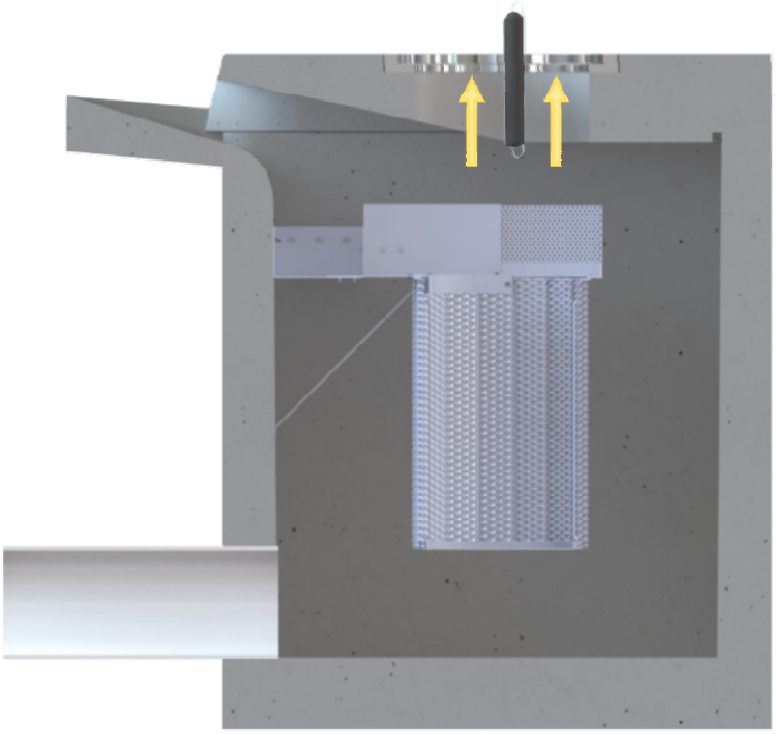
- The last step is to close up and replace the manhole or hatch and remove all traffic control.
- All removed debris and pollutants shall be disposed of following local and state requirements.
- Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.
- In the case of damaged components, replacement parts can be ordered from the manufacturer. Hydrocarbon booms can also be ordered directly from the manufacturer as previously noted.

Maintenance Sequence



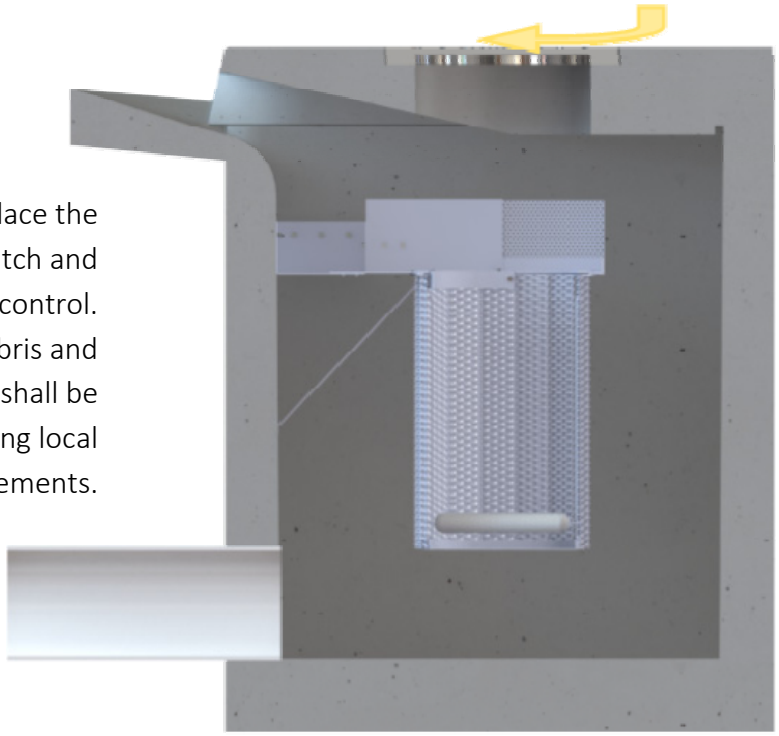
Remove manhole cover and set up vacuum truck to clean the filter basket. Ensure all traffic control and safety measures are in place.

Insert the vacuum hose down into the filter basket and suck out debris. Use a pressure washer to assist in vacuum removal. Pressure wash off the weir and trough and vacuum out any remaining debris.



Remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is fastened to rails on two opposite sides of the basket (vertical rails). Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required install and fasten on a new hydrocarbon boom.

Close up and replace the manhole or hatch and remove all traffic control. All removed debris and pollutants shall be disposed of following local and state requirements.



For Maintenance Services or Information Please Contact Us At:
760-433-7640
Or Email: info@biocleanenvironmental.com

Bio Clean
A Forterra Company

Inspection and Maintenance Report
Catch Basin Only

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/_____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ ☐

Weather Condition _____ Additional Notes _____

For Office Use Only
(Reviewed By)
(Date)
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Catch Basin Size	Evidence of Illicit Discharge?	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Signs of Structural Damage?	Functioning Properly or Maintenance Needed?
1	Lat: Long:							
2	Lat: Long:							
3	Lat: Long:							
4	Lat: Long:							
5	Lat: Long:							
6	Lat: Long:							
7	Lat: Long:							
8	Lat: Long:							
10	Lat: Long:							
11	Lat: Long:							
12	Lat: Long:							

Comments:

Grate Inlet Filter
MLS Type

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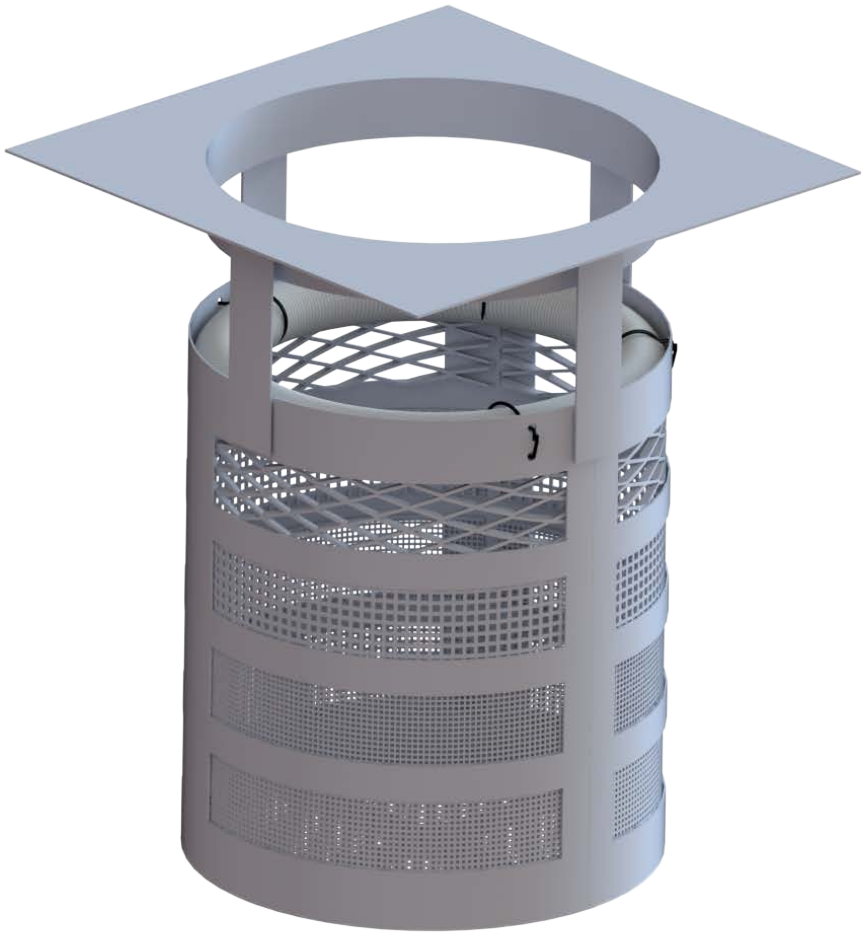
OPERATION & MAINTENANCE



Bio Clean Environmental Services, Inc.
398 Via El Centro
Oceanside, CA 92058

www.BioCleanEnvironmental.com
p: 760.433.7640
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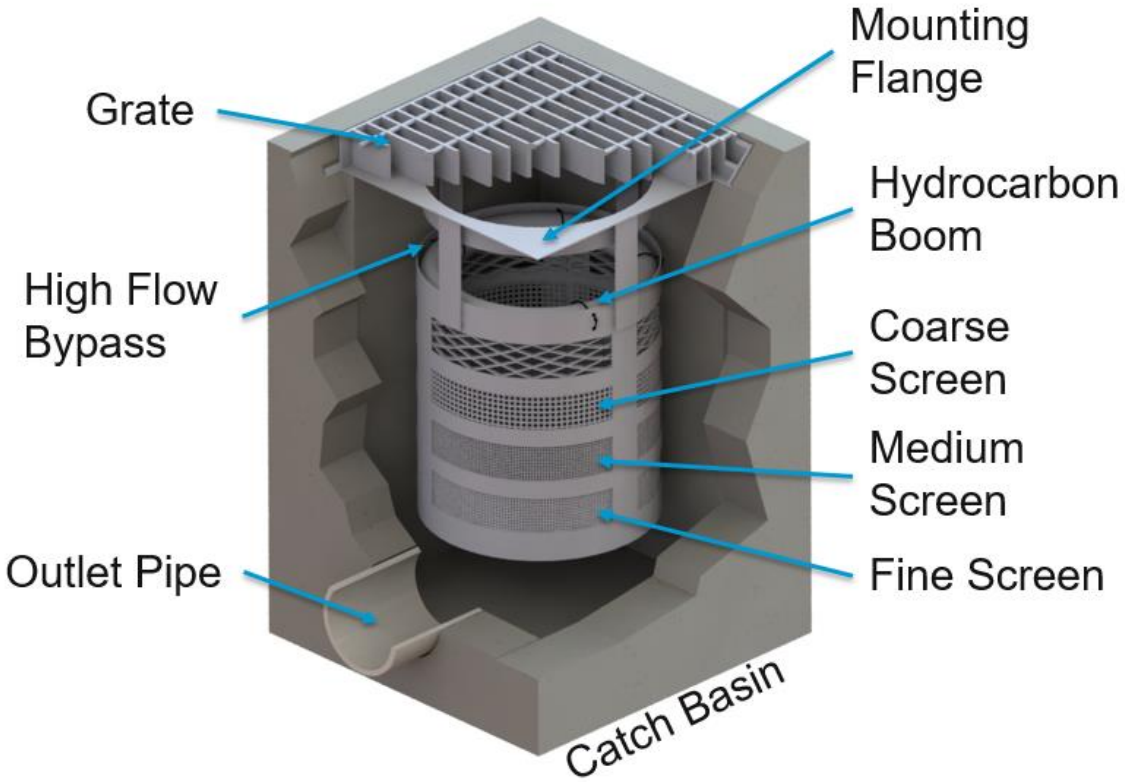
OPERATION & MAINTENANCE

The Bio Clean Grate Inlet Filter is a stormwater device designed to remove high levels of trash, debris, sediments and hydrocarbons. The filter is available in several configurations including trash full capture, multi-level screening, Kraken membrane filter and media filter variations. This manual covers maintenance procedures of the multi-level screening configuration. A supplemental manual is available for the trash full capture configuration, as well as the Kraken and media filter variations. This filter is made of 100% stainless steel and is available in various sizes and depths allowing it to fit in any grated catch basin inlet. The filter's heavy duty construction allows for cleaning with any vacuum truck. The filter can also easily be cleaned by hand.

As with all stormwater BMPs, inspection and maintenance on the Grate Inlet Filter is necessary. Stormwater regulations require BMPs be inspected and maintained to ensure they are operating as designed to allow for effective pollutant removal and provide protection to receiving water bodies. It is recommended that inspections be performed multiple times during the first year to assess site-specific loading conditions. This is recommended because pollutant loading can vary greatly from site to site. Variables such as nearby soil erosion or construction sites, winter sanding of roads, amount of daily traffic and land use can increase pollutant loading on the system. The first year of inspections can be used to set inspection and maintenance intervals for subsequent years. Without appropriate maintenance a BMP can exceed its storage capacity which can negatively affect its continued performance in removing and retaining captured pollutants.



System Diagram:

Inspection Equipment

Following is a list of equipment to allow for simple and effective inspection of the Grate Inlet Filter:

- Bio Clean Environmental Inspection Form (contained within this manual).
- Manhole hook or appropriate tools to remove access hatches and covers.
- Appropriate traffic control signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine inspections or maintenance of the system.

Inspection Steps

The core to any successful stormwater BMP maintenance program is routine inspections. The inspection steps required on the Grate Inlet Filter are quick and easy. As mentioned above, the first year should be seen as the maintenance interval establishment phase. During the first year more frequent inspections should occur in order to gather loading data and maintenance requirements for that specific site. This information can be used to establish a base for long-term inspection and maintenance interval requirements.

The Grate Inlet Filter can be inspected though visual observation. All necessary pre-inspection steps must be carried out before inspection occurs, such as safety measures to protect the inspector and nearby pedestrians from any dangers associated with an open grated inlet. Once the grate has been safely removed the inspection process can proceed:

- Prepare the inspection form by writing in the necessary information including project name, location, date & time, unit number and other info (see inspection form).
- Observe the filter with the grate removed.
- Look for any out of the ordinary obstructions on the grate or in the filter and its bypass. Write down any observations on the inspection form.
- Through observation and/or digital photographs, estimate the amount of trash, foliage and sediment accumulated inside the filter basket. Record this information on the inspection form.
- Observe the condition and color of the hydrocarbon boom. Record this information on the inspection form.
- Finalize inspection report for analysis by the maintenance manager to determine if maintenance is required.

Maintenance Indicators

Based upon observations made during inspection, maintenance of the system may be required based on the following indicators:

- Missing or damaged internal components.
- Obstructions in the filter basket and its bypass.
- Excessive accumulation of trash, foliage and sediment in the filter basket. Maintenance is required when the basket is greater than half-full.
- The following chart shows the 50% and 100% storage capacity of each filter height:

Model	Filter Basket Diameter (in)	Filter Basket Height (in)	50% Storage Capacity (cu ft)	100% Storage Capacity (cu ft)
BC-GRATE-12-12-18	10.00	18.00	0.41	0.82
BC-GRATE-18-18-18	16.00	18.00	1.05	2.09
BC-GRATE-24-24-24	21.00	24.00	2.40	4.81
BC-GRATE-30-30-24	27.00	24.00	3.97	7.95
BC-GRATE-25-38-24	21.00	24.00	4.15	8.31
BC-GRATE-36-36-24	33.00	24.00	5.94	11.87
BC-GRATE-48-48-18	44.00	18.00	7.92	15.83

Maintenance Equipment

It is recommended that a vacuum truck be utilized to minimize the time required to maintain the Curb Inlet Filter, though it can be easily cleaned by hand:

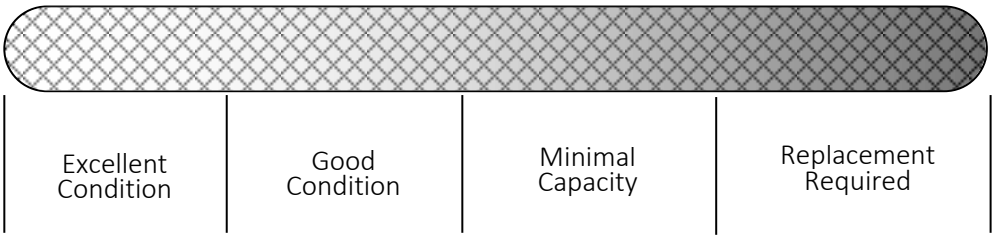
- Bio Clean Environmental Maintenance Form (contained in O&M Manual).
- Manhole hook or appropriate tools to remove the grate.
- Appropriate safety signage and procedures.
- Protective clothing and eye protection.
- Note: entering a confined space requires appropriate safety and certification. It is generally not required for routine maintenance of the system. Small or large vacuum truck (with pressure washer attachment preferred).

Maintenance Procedures

It is recommended that maintenance occurs at least two days after the most recent rain event to allow debris and sediments to dry out. Maintaining the system while flows are still entering it will

increase the time and complexity required for maintenance. Cleaning of the Grate Inlet Filter can be performed utilizing a vacuum truck. Once all safety measures have been set up, cleaning of the Grate Inlet Filter can proceed as followed:

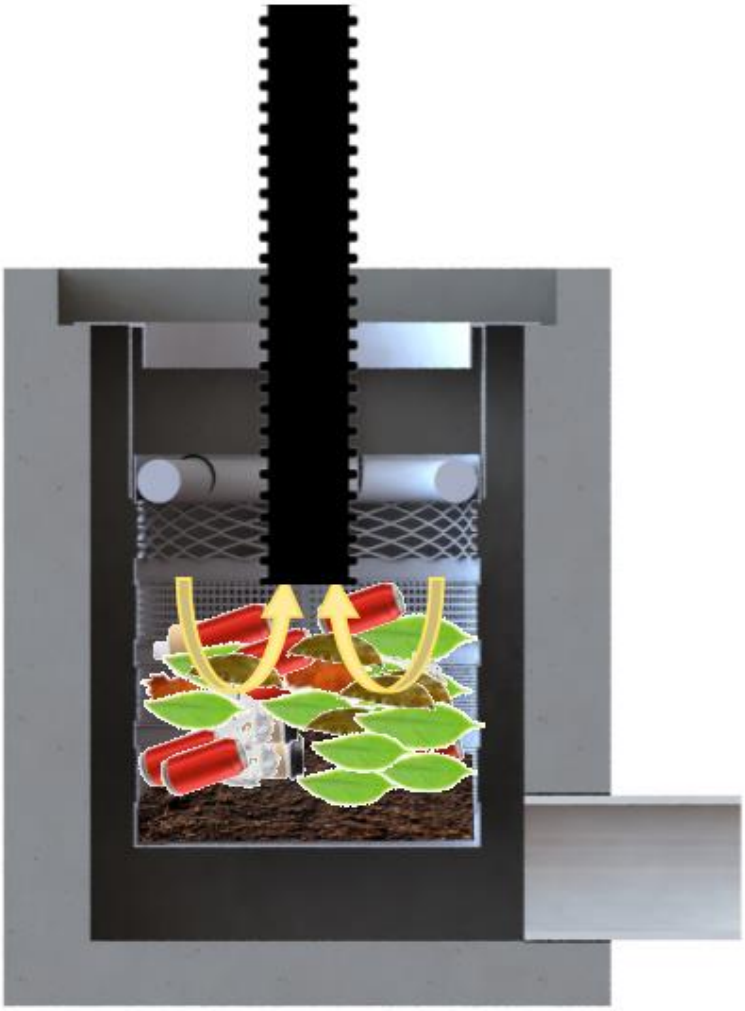
- Remove grate (traffic control and safety measures to be completed prior).
- Using an extension on a vacuum truck, position the hose over the opened catch basin. Insert the vacuum hose down into the filter basket and suck out trash, foliage and sediment. A pressure wash is recommended and will assist in spraying off any debris stuck on the side or bottom of the filter basket. Power wash the sides and bottom of the filter basket off.
- Next, remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is zip tied to the top perimeter of the filter. Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required, install and fasten on a new hydrocarbon boom. Booms can be ordered directly from the manufacturer.
- The following is a replacement indication color chart for the hydrocarbon booms:



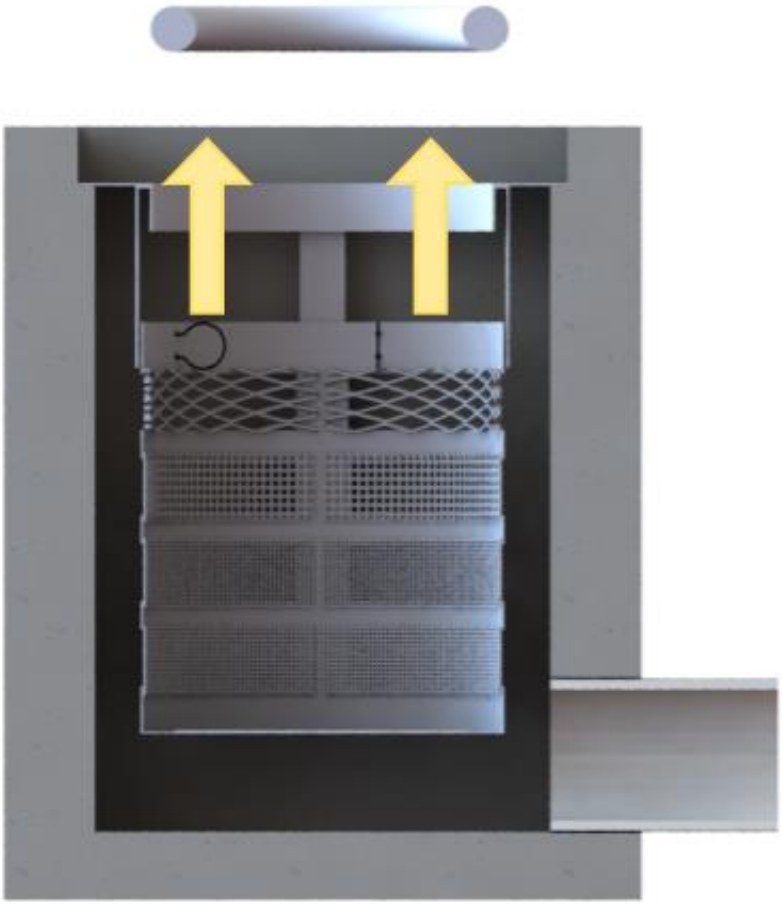
- The last step is to replace the grate and remove all traffic control.
- All removed debris and pollutants shall be disposed of following local and state requirements.
- Disposal requirements for recovered pollutants may vary depending on local guidelines. In most areas the sediment, once dewatered, can be disposed of in a sanitary landfill. It is not anticipated that the sediment would be classified as hazardous waste.
- In the case of damaged components, replacement parts can be ordered from the manufacturer. Hydrocarbon booms can also be ordered directly from the manufacturer as previously noted. NOTE: outlet to catch basin (if it does not have a sump) should be blocked during power washing to prevent any dirty water from discharging from the catch basin.

Maintenance Sequence

Remove grate and set up vacuum truck to clean the filter basket.



Insert the vacuum hose down into the filter basket and suck out debris. Use a pressure washer to assist in vacuum removal. Pressure wash off screens.



Remove the hydrocarbon boom that is attached to the inside of the filter basket. The hydrocarbon boom is zip tied to the top perimeter of the filter. Assess the color and condition of the boom using the following information in the next bullet point. If replacement is required, install and fasten on a new hydrocarbon boom.

Close up and replace the grate and remove all traffic control. All removed debris and pollutants shall be disposed of following local and state requirements.

For Maintenance Services or Information Please Contact Us At:
760-433-7640
Or Email:
info@biocleanenvironmental.com

Bio Clean
A Forterra Company

Inspection and Maintenance Report
Catch Basin Only

Project Name _____

Project Address _____
(city) (Zip Code)

Owner / Management Company _____

Contact _____ Phone ( ) –

Inspector Name _____ Date ____/____/_____ Time _____ AM / PM

Type of Inspection ☐ Routine ☐ Follow Up ☐ Complaint ☐ Storm Storm Event in Last 72-hours? ☐ ☐

Weather Condition _____ Additional Notes _____

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(Date)
Office personnel to complete section to the left.

Site Map #	GPS Coordinates of Insert	Catch Basin Size	Evidence of Illicit Discharge?	Trash Accumulation	Foliage Accumulation	Sediment Accumulation	Signs of Structural Damage?	Functioning Properly or Maintenance Needed?
1	Lat: Long:							
2	Lat: Long:							
3	Lat: Long:							
4	Lat: Long:							
5	Lat: Long:							
6	Lat: Long:							
7	Lat: Long:							
8	Lat: Long:							
10	Lat: Long:							
11	Lat: Long:							
12	Lat: Long:							

Comments:

CONTECH®
ENGINEERED SOLUTIONS

Contech® CMP Detention & Infiltration Maintenance Guide

CONTECH®
CMP DETENTION SYSTEMS

Maintenance

Underground storm water detention and retention systems should be inspected at regular intervals and maintained when necessary to ensure optimum performance. The rate at which the system collects pollutants will depend more heavily on site activities than the size or configuration of the system.

Inspection

Inspection is the key to effective maintenance and is easily performed. CONTECH recommends ongoing quarterly inspections of the accumulated sediment. Sediment deposition and transport may vary from year to year and quarterly inspections will help insure that systems are cleaned out at the appropriate time. Inspections should be performed more often in the winter months in climates where sanding operations may lead to rapid accumulations, or in equipment washdown areas. It is very useful to keep a record of each inspection. A sample inspection log is included for your use.

Systems should be cleaned when inspection reveals that accumulated sediment or trash is clogging the discharge orifice. CONTECH suggests that all systems be designed with an access/inspection manhole situated at or near the inlet and the outlet orifice. Should it be necessary to get inside the system to perform maintenance activities, all appropriate precautions regarding confined space entry and OSHA regulations should be followed.

Cleaning

Maintaining an underground detention or retention system is easiest when there is no flow entering the system. For this reason, it is a good idea to schedule the cleanout during dry weather.

Accumulated sediment and trash can typically be evacuated through the manhole over the outlet orifice. If maintenance is not performed as recommended, sediment and trash may accumulate in front of the outlet orifice. Manhole covers should be securely seated following cleaning activities.

Inspection & Maintenance Log Sample Template

_____" Diameter System			Location: Anywhere, USA		
Date	**Depth of Sediment**	**Accumulated Trash**	**Maintenance Performed**	**Maintenance Personnel**	**Comments**
12/01/10	2"	None	Removed Sediment	B. Johnson	Installed
03/01/11	1"	Some	Removed Sediment and Trash	B. Johnson	Swept parking lot
06/01/11	0"	None	None		
09/01/11	0"	Heavy	Removed Trash	S. Riley	
12/01/11	1"	None	Removed Sediment	S. Riley	
04/01/12	0"	None	None	S. Riley	
04/15/01	2	Some	Removed Sediment and Trash	ACE Environmental Services	

SAMPLE

CONTECH®
CMP DETENTION SYSTEMS

Support

Drawings and specifications are available at www.ContechES.com.

Site-specific support is available from our engineers.

CONTECH®
ENGINEERED SOLUTIONS
800.338.1122
www.ContechES.com

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APPENDIX D

Maintenance and Covenant Agreement

RECORDING REQUESTED BY
AND MAIL TO:

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
BUILDING AND SAFETY DIVISION
900 S. FREMONT AVENUE, 3RD FLOOR
ALHAMBRA, CA 91803-1331

Space above this line is for Recorder's use

COVENANT AND AGREEMENT
REGARDING THE MAINTENANCE OF LOW IMPACT DEVELOPMENT (LID) & NATIONAL POLLUTANTS DISCHARGE ELIMINATION SYSTEM (NPDES) BMPs

The undersigned, Duke Realty 13131 LA Street, LP ("Owner"), hereby certifies that it owns the real property described as follows ("Subject Property"), located in the County of Los Angeles, State of California:

LEGAL DESCRIPTION

ASSESSOR'S ID # APN: 8535-020-007 TRACT NO._____ LOT NO._____

ADDRESS: 13131 Los Angeles Street, Irwindale, CA 91706

Owner is aware of the requirements of County of Los Angeles' Green Building Standards Code, Title 3m Section 4.106.4 (LID), and the National Pollutant Discharge Elimination System (NPDES) permit. The following post-construction BMP features have been installed on the Subject Property:

- ☐ Porous pavement
- ☐ Cistern/rain barrel
- ☐ Infiltration trench/pit
- ☐ Bioretention or biofiltration
- ☐ Rain garden/planter box
- ☐ Disconnect impervious surfaces
- ☐ Dry Well
- ☐ Storage containers
- ☐ Landscape and landscape irrigation
- ☐ Green roof
- ☒ Other An Underground CMP Retention System and Drain Inserts

The location, including GPS x-y coordinates, and type of each post-construction BMP feature installed on the Subject Property is identified on the site diagram attached hereto as Exhibit 1.

Owner hereby covenants and agrees to maintain the above-described post-construction BMP features in a good and operable condition at all times, and in accordance with the LID/NPDES Maintenance Guidelines, attached hereto as Exhibit 2.

Owner further covenants and agrees that the above-described post-construction BMP features shall not be removed from the Subject Property unless and until they have been replaced with other post-construction BMP features in accordance with County of Los Angeles' Green Building Standards Code, Title 31.

Owner further covenants and agrees that if Owner hereafter sells the Subject Property, Owner shall provide printed educational materials to the buyer regarding the post-construction BMP features that are located on the Subject Property, including the type(s) and location(s) of all such features, and instructions for properly maintaining all such features.

Owner makes this Covenant and Agreement on behalf of itself and its successors and assigns. This Covenant and Agreement shall run with the Subject Property and shall be binding upon Owner, future owners, and their heirs, successors and assignees, and shall continue in effect until the release of this Covenant and Agreement by the County of Los Angeles, in its sole discretion.

Owner(s):

By:_____ Date:_____

By:_____ Date:_____

A notary public or other officer completing the attached certificate verifies only the identity of the individual who signed the document to which the certificate is attached, and not the truthfulness, accuracy, or validity of that document.

(PLEASE ATTACH NOTARY)

FOR DEPARTMENT USE ONLY:

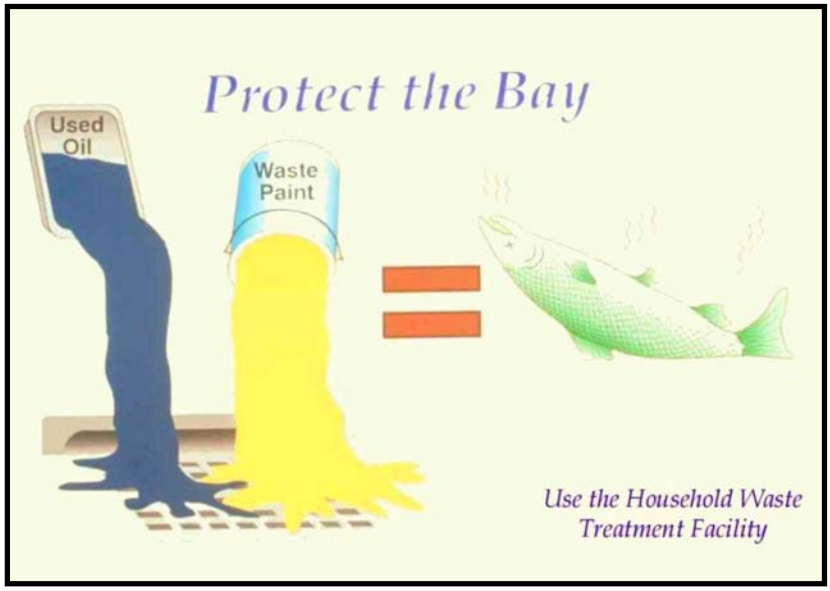
MUST BE APPROVED BY COUNTY OF LOS ANGELES BUILDING AND SAFETY DIVISION PRIOR TO RECORDING.

APPROVED BY:_____ _____ Date _____
(Print Name) (Signature)

APPENDIX E

Educational Materials

Non-Stormwater Discharges SC-10



Art Credit: Margie Winter

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Description

Non-stormwater discharges are those flows that do not consist entirely of stormwater. Some non-stormwater discharges do not include pollutants and may be discharged to the storm drain. These include uncontaminated groundwater and natural springs. There are also some non-stormwater discharges that typically do not contain pollutants and may be discharged to the storm drain with conditions. These include car washing, air conditioner condensate, etc. However there are certain non-stormwater discharges that pose environmental concern. These discharges may originate from illegal dumping or from internal floor drains, appliances, industrial processes, sinks, and toilets that are connected to the nearby storm drainage system. These discharges (which may include: process waste waters, cooling waters, wash waters, and sanitary wastewater) can carry substances such as paint, oil, fuel and other automotive fluids, chemicals and other pollutants into storm drains. They can generally be detected through a combination of detection and elimination. The ultimate goal is to effectively eliminate non-stormwater discharges to the stormwater drainage system through implementation of measures to detect, correct, and enforce against illicit connections and illegal discharges of pollutants on streets and into the storm drain system and creeks.

Approach

Initially the industry must make an assessment of non-stormwater discharges to determine which types must be eliminated or addressed through BMPs. The focus of the following approach is in the elimination of non-stormwater discharges.

CASQA
California Stormwater Quality Association

Pollution Prevention

- Ensure that used oil, used antifreeze, and hazardous chemical recycling programs are being implemented. Encourage litter control.

Suggested Protocols

Recommended Complaint Investigation Equipment

- Field Screening Analysis
  - pH paper or meter
  - Commercial stormwater pollutant screening kit that can detect for reactive phosphorus, nitrate nitrogen, ammonium nitrogen, specific conductance, and turbidity
  - Sample jars
  - Sample collection pole
  - A tool to remove access hole covers
- Laboratory Analysis
  - Sample cooler
  - Ice
  - Sample jars and labels
  - Chain of custody forms
- Documentation
  - Camera
  - Notebook
  - Pens
  - Notice of Violation forms
  - Educational materials

General

- Develop clear protocols and lines of communication for effectively prohibiting non-stormwater discharges, especially those that are not classified as hazardous. These are often not responded to as effectively as they need to be.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as “Dump No Waste Drains to Stream” stenciled or demarcated next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

- See SC44 Stormwater Drainage System Maintenance for additional information.

Illicit Connections

- Locate discharges from the industrial storm drainage system to the municipal storm drain system through review of "as-built" piping schematics.
- Isolate problem areas and plug illicit discharge points.
- Locate and evaluate all discharges to the industrial storm drain system.

Visual Inspection and Inventory

- Inventory and inspect each discharge point during dry weather.
- Keep in mind that drainage from a storm event can continue for a day or two following the end of a storm and groundwater may infiltrate the underground stormwater collection system. Also, non-stormwater discharges are often intermittent and may require periodic inspections.

Review Infield Piping

- A review of the "as-built" piping schematic is a way to determine if there are any connections to the stormwater collection system.
- Inspect the path of floor drains in older buildings.

Smoke Testing

- Smoke testing of wastewater and stormwater collection systems is used to detect connections between the two systems.
- During dry weather the stormwater collection system is filled with smoke and then traced to sources. The appearance of smoke at the base of a toilet indicates that there may be a connection between the sanitary and the stormwater system.

Dye Testing

- A dye test can be performed by simply releasing a dye into either your sanitary or process wastewater system and examining the discharge points from the stormwater collection system for discoloration.

TV Inspection of Drainage System

- TV Cameras can be employed to visually identify illicit connections to the industrial storm drainage system.

Illegal Dumping

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste.

- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Once a site has been cleaned:

- Post "No Dumping" signs with a phone number for reporting dumping and disposal.
- Landscaping and beautification efforts of hot spots may also discourage future dumping, as well as provide open space and increase property values.
- Lighting or barriers may also be needed to discourage future dumping.
- See fact sheet SC11 Spill Prevention, Control, and Cleanup.

Inspection

- Regularly inspect and clean up hot spots and other storm drainage areas where illegal dumping and disposal occurs.
- Conduct field investigations of the industrial storm drain system for potential sources of non-stormwater discharges.
- Pro-actively conduct investigations of high priority areas. Based on historical data, prioritize specific geographic areas and/or incident type for pro-active investigations.

Reporting

- A database is useful for defining and tracking the magnitude and location of the problem.
- Report prohibited non-stormwater discharges observed during the course of normal daily activities so they can be investigated, contained, and cleaned up or eliminated.
- Document that non-stormwater discharges have been eliminated by recording tests performed, methods used, dates of testing, and any on-site drainage points observed.
- Document and report annually the results of the program.
- Maintain documentation of illicit connection and illegal dumping incidents, including significant conditionally exempt discharges that are not properly managed.

Training

- Training of technical staff in identifying and documenting illegal dumping incidents is required.
- Consider posting the quick reference table near storm drains to reinforce training.
- Train employees to identify non-stormwater discharges and report discharges to the appropriate departments.

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur. Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Determine and implement appropriate outreach efforts to reduce non-permissible non-stormwater discharges.
- Conduct spill response drills annually (if no events occurred to evaluate your plan) in cooperation with other industries.
- When a responsible party is identified, educate the party on the impacts of his or her actions.

Spill Response and Prevention

- See SC11 Spill Prevention Control and Cleanup.

Other Considerations

- Many facilities do not have accurate, up-to-date schematic drawings.

Requirements

Costs (including capital and operation & maintenance)

- The primary cost is for staff time and depends on how aggressively a program is implemented.
- Cost for containment and disposal is borne by the discharger.
- Illicit connections can be difficult to locate especially if there is groundwater infiltration.
- Indoor floor drains may require re-plumbing if cross-connections to storm drains are detected.

Maintenance (including administrative and staffing)

- Illegal dumping and illicit connection violations requires technical staff to detect and investigate them.

Supplemental Information

Further Detail of the BMP

Illegal Dumping

- Substances illegally dumped on streets and into the storm drain systems and creeks include paints, used oil and other automotive fluids, construction debris, chemicals, fresh concrete, leaves, grass clippings, and pet wastes. All of these wastes cause stormwater and receiving water quality problems as well as clog the storm drain system itself.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots

- Types and quantities (in some cases) of wastes
- Patterns in time of occurrence (time of day/night, month, or year)
- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

One of the keys to success of reducing or eliminating illegal dumping is increasing the number of people at the facility who are aware of the problem and who have the tools to at least identify the incident, if not correct it. Therefore, train field staff to recognize and report the incidents.

What constitutes a "non-stormwater" discharge?

- Non-stormwater discharges to the stormwater collection system may include any water used directly in the manufacturing process (process wastewater), air conditioning condensate and coolant, non-contact cooling water, cooling equipment condensate, outdoor secondary containment water, vehicle and equipment wash water, sink and drinking fountain wastewater, sanitary wastes, or other wastewaters.

Permit Requirements

- Facilities subject to stormwater permit requirements must include a certification that the stormwater collection system has been tested or evaluated for the presence of non-stormwater discharges. The State's General Industrial Stormwater Permit requires that non-stormwater discharges be eliminated prior to implementation of the facility's SWPPP.

Performance Evaluation

- Review annually internal investigation results; assess whether goals were met and what changes or improvements are necessary.
- Obtain feedback from personnel assigned to respond to, or inspect for, illicit connections and illegal dumping incidents.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Spill Prevention, Control & Cleanup SC-11

Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Many activities that occur at an industrial or commercial site have the potential to cause accidental or illegal spills. Preparation for accidental or illegal spills, with proper training and reporting systems implemented, can minimize the discharge of pollutants to the environment.

Spills and leaks are one of the largest contributors of stormwater pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify potential spill areas, specify material handling procedures, describe spill response procedures, and provide spill clean-up equipment. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills.

Approach

Pollution Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- Develop a Spill Prevention Control and Countermeasure (SPCC) Plan. The plan should include:

- Description of the facility, owner and address, activities and chemicals present
- Facility map
- Notification and evacuation procedures
- Cleanup instructions
- Identification of responsible departments
- Identify key spill response personnel

- Recycle, reclaim, or reuse materials whenever possible. This will reduce the amount of process materials that are brought into the facility.

Suggested Protocols (including equipment needs)

Spill Prevention

- Develop procedures to prevent/mitigate spills to storm drain systems. Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures.

- If consistent illegal dumping is observed at the facility:
  - Post "No Dumping" signs with a phone number for reporting illegal dumping and disposal. Signs should also indicate fines and penalties applicable for illegal dumping.
  - Landscaping and beautification efforts may also discourage illegal dumping.
  - Bright lighting and/or entrance barriers may also be needed to discourage illegal dumping.

- Store and contain liquid materials in such a manner that if the tank is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.

- If the liquid is oil, gas, or other material that separates from and floats on water, install a spill control device (such as a tee section) in the catch basins that collects runoff from the storage tank area.

- Routine maintenance:
  - Place drip pans or absorbent materials beneath all mounted taps, and at all potential drip and spill locations during filling and unloading of tanks. Any collected liquids or soiled absorbent materials must be reused/recycled or properly disposed.
  - Store and maintain appropriate spill cleanup materials in a location known to all near the tank storage area; and ensure that employees are familiar with the site's spill control plan and/or proper spill cleanup procedures.
  - Sweep and clean the storage area monthly if it is paved, *do not hose down the area to a storm drain*.

- Check tanks (and any containment sumps) daily for leaks and spills. Replace tanks that are leaking, corroded, or otherwise deteriorating with tanks in good condition. Collect all spilled liquids and properly dispose of them.

- Label all containers according to their contents (e.g., solvent, gasoline).
- Label hazardous substances regarding the potential hazard (corrosive, radioactive, flammable, explosive, poisonous).
- Prominently display required labels on transported hazardous and toxic materials (per US DOT regulations).
- Identify key spill response personnel.

Spill Control and Cleanup Activities

- Follow the Spill Prevention Control and Countermeasure Plan.
- Clean up leaks and spills immediately.
- Place a stockpile of spill cleanup materials where it will be readily accessible (e.g., near storage and maintenance areas).
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to a certified laundry (rags) or disposed of as hazardous waste. Physical methods for the cleanup of dry chemicals include the use of brooms, shovels, sweepers, or plows.
- Never hose down or bury dry material spills. Sweep up the material and dispose of properly.
- Chemical cleanups of material can be achieved with the use of adsorbents, gels, and foams. Use adsorbent materials on small spills rather than hosing down the spill. Remove the adsorbent materials promptly and dispose of properly.
- For larger spills, a private spill cleanup company or Hazmat team may be necessary.

Reporting

- Report spills that pose an immediate threat to human health or the environment to the Regional Water Quality Control Board.
- Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).
- Report spills to local agencies, such as the fire department; they can assist in cleanup.
- Establish a system for tracking incidents. The system should be designed to identify the following:

  - Types and quantities (in some cases) of wastes

  - Patterns in time of occurrence (time of day/night, month, or year)

- Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
- Responsible parties

Training

- Educate employees about spill prevention and cleanup.
- Well-trained employees can reduce human errors that lead to accidental releases or spills:
  - The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
  - Employees should be familiar with the Spill Prevention Control and Countermeasure Plan.
- Employees should be educated about aboveground storage tank requirements. Employees responsible for aboveground storage tanks and liquid transfers should be thoroughly familiar with the Spill Prevention Control and Countermeasure Plan and the plan should be readily available.
- Train employees to recognize and report illegal dumping incidents.

Other Considerations (Limitations and Regulations)

- State regulations exist for facilities with a storage capacity of 10,000 gallons or more of petroleum to prepare a Spill Prevention Control and Countermeasure (SPCC) Plan (Health & Safety Code Chapter 6.67).
- State regulations also exist for storage of hazardous materials (Health & Safety Code Chapter 6.95), including the preparation of area and business plans for emergency response to the releases or threatened releases.
- Consider requiring smaller secondary containment areas (less than 200 sq. ft.) to be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.

Requirements

Costs (including capital and operation & maintenance)

- Will vary depending on the size of the facility and the necessary controls.
- Prevention of leaks and spills is inexpensive. Treatment and/or disposal of contaminated soil or water can be quite expensive.

Maintenance (including administrative and staffing)

- This BMP has no major administrative or staffing requirements. However, extra time is needed to properly handle and dispose of spills, which results in increased labor costs.

Supplemental Information

Further Detail of the BMP

Reporting

Record keeping and internal reporting represent good operating practices because they can increase the efficiency of the facility and the effectiveness of BMPs. A good record keeping system helps the facility minimize incident recurrence, correctly respond with appropriate cleanup activities, and comply with legal requirements. A record keeping and reporting system should be set up for documenting spills, leaks, and other discharges, including discharges of hazardous substances in reportable quantities. Incident records describe the quality and quantity of non-stormwater discharges to the storm sewer. These records should contain the following information:

- Date and time of the incident
- Weather conditions
- Duration of the spill/leak/discharge
- Cause of the spill/leak/discharge
- Response procedures implemented
- Persons notified
- Environmental problems associated with the spill/leak/discharge

Separate record keeping systems should be established to document housekeeping and preventive maintenance inspections, and training activities. All housekeeping and preventive maintenance inspections should be documented. Inspection documentation should contain the following information:

- The date and time the inspection was performed
- Name of the inspector
- Items inspected
- Problems noted
- Corrective action required
- Date corrective action was taken

Other means to document and record inspection results are field notes, timed and dated photographs, videotapes, and drawings and maps.

Aboveground Tank Leak and Spill Control

Accidental releases of materials from aboveground liquid storage tanks present the potential for contaminating stormwater with many different pollutants. Materials spilled, leaked, or lost from

tanks may accumulate in soils or on impervious surfaces and be carried away by stormwater runoff.

The most common causes of unintentional releases are:

- Installation problems
- Failure of piping systems (pipes, pumps, flanges, couplings, hoses, and valves)
- External corrosion and structural failure
- Spills and overfills due to operator error
- Leaks during pumping of liquids or gases from truck or rail car to a storage tank or vice versa

Storage of reactive, ignitable, or flammable liquids should comply with the Uniform Fire Code and the National Electric Code. Practices listed below should be employed to enhance the code requirements:

- Tanks should be placed in a designated area.
- Tanks located in areas where firearms are discharged should be encapsulated in concrete or the equivalent.
- Designated areas should be impervious and paved with Portland cement concrete, free of cracks and gaps, in order to contain leaks and spills.
- Liquid materials should be stored in UL approved double walled tanks or surrounded by a curb or dike to provide the volume to contain 10 percent of the volume of all of the containers or 110 percent of the volume of the largest container, whichever is greater. The area inside the curb should slope to a drain.
- For used oil or dangerous waste, a dead-end sump should be installed in the drain.
- All other liquids should be drained to the sanitary sewer if available. The drain must have a positive control such as a lock, valve, or plug to prevent release of contaminated liquids.
- Accumulated stormwater in petroleum storage areas should be passed through an oil/water separator.

Maintenance is critical to preventing leaks and spills. Conduct routine inspections and:

- Check for external corrosion and structural failure.
- Check for spills and overfills due to operator error.
- Check for failure of piping system (pipes, pumps, flanger, coupling, hoses, and valves).
- Check for leaks or spills during pumping of liquids or gases from truck or rail car to a storage facility or vice versa.

- Visually inspect new tank or container installation for loose fittings, poor welding, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, and tank walls and piping system. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Frequently relocate accumulated stormwater during the wet season.
- Periodically conduct integrity testing by a qualified professional.

Vehicle Leak and Spill Control

Major spills on roadways and other public areas are generally handled by highly trained Hazmat teams from local fire departments or environmental health departments. The measures listed below pertain to leaks and smaller spills at vehicle maintenance shops.

In addition to implementing the spill prevention, control, and clean up practices above, use the following measures related to specific activities:

Vehicle and Equipment Maintenance

- Perform all vehicle fluid removal or changing inside or under cover to prevent the run-on of stormwater and the runoff of spills.
- Regularly inspect vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment onsite.
- Always use secondary containment, such as a drain pan or drop cloth, to catch spills or leaks when removing or changing fluids.
- Immediately drain all fluids from wrecked vehicles.
- Store wrecked vehicles or damaged equipment under cover.
- Place drip pans or absorbent materials under heavy equipment when not in use.
- Use adsorbent materials on small spills rather than hosing down the spill.
- Remove the adsorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trashcans or dumpsters can leak oil and contaminate stormwater. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.

- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries, even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put it into the containment area until you are sure it is not leaking.

Vehicle and Equipment Fueling

- Design the fueling area to prevent the run-on of stormwater and the runoff of spills:
  - Cover fueling area if possible.
  - Use a perimeter drain or slope pavement inward with drainage to a sump.
  - Pave fueling area with concrete rather than asphalt.
- If dead-end sump is not used to collect spills, install an oil/water separator.
- Install vapor recovery nozzles to help control drips as well as air pollution.
- Discourage "topping-off' of fuel tanks.
- Use secondary containment when transferring fuel from the tank truck to the fuel tank.
- Use adsorbent materials on small spills and general cleaning rather than hosing down the area. Remove the adsorbent materials promptly.
- Carry out all Federal and State requirements regarding underground storage tanks, or install above ground tanks.
- Do not use mobile fueling of mobile industrial equipment around the facility; rather, transport the equipment to designated fueling areas.
- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Train employees in proper fueling and cleanup procedures.

Industrial Spill Prevention Response

For the purposes of developing a spill prevention and response program to meet the stormwater regulations, facility managers should use information provided in this fact sheet and the spill prevention/response portions of the fact sheets in this handbook, for specific activities. The program should:

- Integrate with existing emergency response/hazardous materials programs (e.g., Fire Department)
- Develop procedures to prevent/mitigate spills to storm drain systems
- Identify responsible departments
- Develop and standardize reporting procedures, containment, storage, and disposal activities, documentation, and follow-up procedures
- Address spills at municipal facilities, as well as public areas

- Provide training concerning spill prevention, response and cleanup to all appropriate personnel

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Stormwater Managers Resource Center http://www.stormwatercenter.net/

Outdoor Loading/Unloading SC-30

Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

The loading/unloading of materials usually takes place outside on docks or terminals; therefore, materials spilled, leaked, or lost during loading/unloading may collect in the soil or on other surfaces and have the potential to be carried away by stormwater runoff or when the area is cleaned. Additionally, rainfall may wash pollutants from machinery used to unload or move materials. Implementation of the following protocols will prevent or reduce the discharge of pollutants to stormwater from outdoor loading/unloading of materials.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Keep accurate maintenance logs to evaluate materials removed and improvements made.
- Park tank trucks or delivery vehicles in designated areas so that spills or leaks can be contained.
- Limit exposure of material to rainfall whenever possible.
- Prevent stormwater run-on.
- Check equipment regularly for leaks.

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Suggested Protocols

Loading and Unloading – General Guidelines

- Develop an operations plan that describes procedures for loading and/or unloading.
- Conduct loading and unloading in dry weather if possible.
- Cover designated loading/unloading areas to reduce exposure of materials to rain.
- Consider placing a seal or door skirt between delivery vehicles and building to prevent exposure to rain.
- Design loading/unloading area to prevent stormwater run-on, which would include grading or berming the area, and position roof downspouts so they direct stormwater away from the loading/unloading areas.
- Have employees load and unload all materials and equipment in covered areas such as building overhangs at loading docks if feasible.
- Load/unload only at designated loading areas.
- Use drip pans underneath hose and pipe connections and other leak-prone spots during liquid transfer operations, and when making and breaking connections. Several drip pans should be stored in a covered location near the liquid transfer area so that they are always available, yet protected from precipitation when not in use. Drip pans can be made specifically for railroad tracks. Drip pans must be cleaned periodically, and drip collected materials must be disposed of properly.
- Pave loading areas with concrete instead of asphalt.
- Avoid placing storm drains in the area.
- Grade and/or berm the loading/unloading area to a drain that is connected to a deadend.

Inspection

- Check loading and unloading equipment regularly for leaks, including valves, pumps, flanges and connections.
- Look for dust or fumes during loading or unloading operations.

Training

- Train employees (e.g., fork lift operators) and contractors on proper spill containment and cleanup.
- Have employees trained in spill containment and cleanup present during loading/unloading.
- Train employees in proper handling techniques during liquid transfers to avoid spills.
- Make sure forklift operators are properly trained on loading and unloading procedures.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Contain leaks during transfer.
- Store and maintain appropriate spill cleanup materials in a location that is readily accessible and known to all and ensure that employees are familiar with the site's spill control plan and proper spill cleanup procedures.
- Have an emergency spill cleanup plan readily available.
- Use drip pans or comparable devices when transferring oils, solvents, and paints.

Other Considerations (Limitations and Regulations)

- Space and time limitations may preclude all transfers from being performed indoors or under cover.
- It may not be possible to conduct transfers only during dry weather.

Requirements

Costs

Costs should be low except when covering a large loading/unloading area.

Maintenance

- Conduct regular inspections and make repairs as necessary. The frequency of repairs will depend on the age of the facility.
- Check loading and unloading equipment regularly for leaks.
- Conduct regular broom dry-sweeping of area.

Supplemental Information

Further Detail of the BMP

Special Circumstances for Indoor Loading/Unloading of Materials

Loading or unloading of liquids should occur in the manufacturing building so that any spills that are not completely retained can be discharged to the sanitary sewer, treatment plant, or treated in a manner consistent with local sewer authorities and permit requirements.

- For loading and unloading tank trucks to above and below ground storage tanks, the following procedures should be used:
  - The area where the transfer takes place should be paved. If the liquid is reactive with the asphalt, Portland cement should be used to pave the area.
  - The transfer area should be designed to prevent run-on of stormwater from adjacent areas. Sloping the pad and using a curb, like a speed bump, around the uphill side of the transfer area should reduce run-on.

- The transfer area should be designed to prevent runoff of spilled liquids from the area. Sloping the area to a drain should prevent runoff. The drain should be connected to a dead-end sump or to the sanitary sewer. A positive control valve should be installed on the drain.

- For transfer from rail cars to storage tanks that must occur outside, use the following procedures:

  - Drip pans should be placed at locations where spillage may occur, such as hose connections, hose reels, and filler nozzles. Use drip pans when making and breaking connections.

  - Drip pan systems should be installed between the rails to collect spillage from tank cars.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

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King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

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Outdoor Equipment Operations SC-32

Description

Outside process equipment operations and maintenance can contaminate stormwater runoff. Activities, such as grinding, painting, coating, sanding, degreasing or parts cleaning, landfills and waste piles, solid waste treatment and disposal, are examples of process operations that can lead to contamination of stormwater runoff. Source controls for outdoor process equipment operations and maintenance include reducing the amount of waste created, enclosing or covering all or some of the equipment, installing secondary containment, and training employees.

Approach

Pollution Prevention

- Perform the activity during dry periods.
- Use non-toxic chemicals for maintenance and minimize or eliminate the use of solvents.

Suggested Protocols

- Consider enclosing the activity in a building and connecting the floor drains to the sanitary sewer.
- Cover the work area with a permanent roof if possible.
- Minimize contact of stormwater with outside process equipment operations through berming and drainage routing (run-on prevention). If possible, connect process equipment area to public sewer or facility wastewater treatment system. Some municipalities require that secondary containment areas be connected to the sanitary sewer, prohibiting any hard connections to the storm drain.
- Dry clean the work area regularly.

Training

- Train employees to perform the activity during dry periods only or substituting benign materials for more toxic ones.
- Train employee and contractors in proper techniques for spill containment and cleanup. Employees should have the tools and knowledge to immediately begin cleaning up a spill should one occur.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

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- Have employees trained in emergency spill cleanup procedures present when dangerous waste, liquid chemicals, or other wastes are delivered.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Prevent operator errors by using engineering safe guards and thus reducing accidental releases of pollutant.
- Inspect storage areas regularly for leaks or spills. Also check for structural failure, spills and overfills due to operator error, and/or failure of piping system.

Other Considerations

- Providing cover may be expensive.
- Space limitations may preclude enclosing some equipment.
- Storage sheds often must meet building and fire code requirements.

Requirements

Costs

Costs vary depending on the complexity of the operation and the amount of control necessary for stormwater pollution control.

Maintenance

- Conduct routine preventive maintenance, including checking process equipment for leaks.
- Clean the storm drain system regularly.

Supplemental Information

Further Detail of the BMP

Hydraulic/Treatment Modifications

If stormwater becomes polluted, it should be captured and treated. If you do not have your own process wastewater treatment system, consider discharging to the public sewer system. Use of the public sewer might be allowed under the following conditions:

- If the activity area is very small (less than a few hundred square feet), the local sewer authority may be willing to allow the area to remain uncovered with the drain connected to the public sewer.
- It may be possible under unusual circumstances to connect a much larger area to the public sewer, as long as the rate of stormwater discharges does not exceed the capacity of the wastewater treatment plant. The stormwater could be stored during the storm and then transferred to the public sewer when the normal flow is low, such as at night.

Industries that generate large volumes of process wastewater typically have their own treatment system and corresponding permit. These industries have the discretion to use their wastewater treatment system to treat stormwater within the constraints of their permit requirements for process treatment. It may also be possible for the industry to discharge the stormwater directly to an effluent outfall without treatment as long as the total loading of the discharged process

water and stormwater does not exceed the loading had a stormwater treatment device been used. This could be achieved by reducing the loading from the process wastewater treatment system. Check with your Regional Water Quality Control Board or local sewering agency, as this option would be subject to permit constraints and potentially regular monitoring.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

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King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

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The Stormwater Managers Resource Center http://www.stormwatercenter.net

Waste Handling & Disposal SC-34

Photo Credit: Geoff Brosseau

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Description

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter stormwater runoff. The discharge of pollutants to stormwater from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on and runoff.

Targeted Constituents

Sediment	
Nutrients	
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	✓
Organics	✓

Approach

Pollution Prevention

- Accomplish reduction in the amount of waste generated using the following source controls:
  - Production planning and sequencing
  - Process or equipment modification
  - Raw material substitution or elimination
  - Loss prevention and housekeeping
  - Waste segregation and separation
  - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- Recycle materials whenever possible.

Suggested Protocols

General

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent stormwater run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Do not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).

- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- Use all of the product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning up spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.

Run-on/Runoff Prevention

- Prevent stormwater run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropyleneor hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Inspection

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.

- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Training

- Train staff in pollution prevention measures and proper disposal methods.
- Train employees and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Train employees and subcontractors in proper hazardous waste management.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
  - Vehicles equipped with baffles for liquid waste
  - Trucks with sealed gates and spill guards for solid waste

Other Considerations (Limitations and Regulations)

Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

Requirements

Costs

Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.

Maintenance

- None except for maintaining equipment for material tracking program.

Supplemental Information

Further Detail of the BMP

Land Treatment System

Minimize runoff of polluted stormwater from land application by:

- Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, and there is a closed drainage system

- Avoiding application of waste to the site when it is raining or when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site
- Maintaining adequate barriers between the land application site and the receiving waters (planted strips are particularly good)
- Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working

Examples

The port of Long Beach has a state-of-the-art database for identifying potential pollutant sources, documenting facility management practices, and tracking pollutants.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Solid Waste Container Best Management Practices – Fact Sheet On-Line Resources – Environmental Health and Safety. Harvard University. 2002.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Safer Alternative Products SC-35

Description

Promote the use of less harmful products and products that contain little or no TMDL pollutants. Alternatives exist for most product classes including chemical fertilizers, pesticides, cleaning solutions, janitorial chemicals, automotive and paint products, and consumables (batteries, fluorescent lamps).

Approach

Pattern a new program after the many established programs around the state and country. Integrate this best management practice as much as possible with existing programs at your facility.

Develop a comprehensive program based on:

- The "Precautionary Principle," which is an alternative to the "Risk Assessment" model that says it's acceptable to use a potentially harmful product until physical evidence of its harmful effects are established and deemed too costly from an environmental or public health perspective. For instance, a risk assessment approach might say it's acceptable to use a pesticide until there is direct proof of an environmental impact. The Precautionary Principle approach is used to evaluate whether a given product is safe, whether it is really necessary, and whether alternative products would perform just as well.
- Environmentally Preferable Purchasing Program to minimize the purchase of products containing hazardous ingredients used in the facility's custodial services, fleet maintenance, and facility maintenance in favor of using alternate products that pose less risk to employees and to the environment.
- Integrated Pest Management (IPM) or Less-Toxic Pesticide Program, which uses a pest management approach that minimizes the use of toxic chemicals and gets rid of pests by methods that pose a lower risk to employees, the public, and the environment.
- Energy Efficiency Program including no-cost and low-cost energy conservation and efficiency actions that can reduce both energy consumption and electricity bills, along with long-term energy efficiency investments.

Consider the following mechanisms for developing and implementing a comprehensive program:

- Policies

Objectives

- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	
Nutrients	✓
Trash	
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

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- Procedures
  - Standard operating procedures (SOPs)
  - Purchasing guidelines and procedures
  - Bid packages (services and supplies)
- Materials
  - Preferred or approved product and supplier lists
  - Product and supplier evaluation criteria
  - Training sessions and manuals
  - Fact sheets for employees

Implement this BMP in conjunction with the Vehicle and Equipment Management fact sheets (SC20 – SC22) and SC41, Building and Grounds Maintenance.

Training

- Employees who handle potentially harmful materials in the use of safer alternatives.
- Purchasing departments should be encouraged to procure less hazardous materials and products that contain little or no harmful substances or TMDL pollutants.

Regulations

This BMP has no regulatory requirements. Existing regulations already encourage facilities to reduce the use of hazardous materials through incentives such as reduced:

- Specialized equipment storage and handling requirements,
- Storm water runoff sampling requirements,
- Training and licensing requirements, and
- Record keeping and reporting requirements.

Equipment

- There are no major equipment requirements to this BMP.

Limitations

- Alternative products may not be available, suitable, or effective in every case.

Requirements

Cost Considerations

- The primary cost is for staff time to: 1) develop new policies and procedures and 2) educate purchasing departments and employees who handle potentially harmful materials about the availability, procurement, and use of safer alternatives.

- Some alternative products may be slightly more expensive than conventional products.

Supplemental Information

Employees and contractors / service providers can both be educated about safer alternatives by using information developed by a number of organizations including the references and resources listed below.

The following discussion provides some general information on safer alternatives. More specific information on particular hazardous materials and the available alternatives may be found in the references and resources listed below.

- Automotive products – Less toxic alternatives are not available for many automotive products, especially engine fluids. But there are alternatives to grease lubricants, car polishes, degreasers, and windshield washer solution. Rerefined motor oil is also available.
- Vehicle/Trailer lubrication – Fifth wheel bearings on trucks require routine lubrication. Adhesive lubricants are available to replace typical chassis grease.
- Cleaners – Vegetables-based or citrus-based soaps are available to replace petroleum-based soaps/detergents.
- Paint products – Water-based paints, wood preservatives, stains, and finishes are available.
- Pesticides – Specific alternative products or methods exist to control most insects, fungi, and weeds.
- Chemical Fertilizers – Compost and soil amendments are natural alternatives.
- Consumables – Manufacturers have either reduced or are in the process of reducing the amount of heavy metals in consumables such as batteries and fluorescent lamps. All fluorescent lamps contain mercury, however low-mercury containing lamps are now available from most hardware and lighting stores. Fluorescent lamps are also more energy efficient than the average incandescent lamp.
- Janitorial chemicals – Even biodegradable soap can harm fish and wildlife before it biodegrades. Biodegradable does not mean non-toxic. Safer products and procedures are available for floor stripping and cleaning, as well as carpet, glass, metal, and restroom cleaning and disinfecting.

Examples

There are a number of business and trade associations, and communities with effective programs. Some of the more prominent are listed below in the references and resources section.

References and Resources

Note: Many of these references provide alternative products for materials that typically are used inside and disposed to the sanitary sewer as well as alternatives to products that usually end up in the storm drain.

General Sustainable Practices and Pollution Prevention Including Pollutant-Specific Information

California Department of Toxic Substances Control (www.dtsc.ca.gov)

California Integrated Waste Management Board (www.ciwmb.ca.gov)

City of Santa Monica (www.santa-monica.org/environment)

City of Palo Alto (www.city.palo-alto.ca.us/cleanbay)

City and County of San Francisco, Department of the Environment (www.ci.sf.ca.us/sfenvironment)

Earth 911 (www.earth911.org/master.asp)

Environmental Finance Center Region IX (www.greenstart.org/efc9)

Flex Your Power (www.flexyourpower.ca.gov)

GreenBiz.com (www.greenbiz.com)

Green Business Program (www.abag.org/bayarea/enviro/gbus/gb.html)

Pacific Industrial and Business Association (www.piba.org)

Sacramento Clean Water Business Partners (www.sacstormwater.org)

USEPA BMP fact sheet – Alternative products (http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll_2.cfm)

USEPA Region IX Pollution Prevention Program (www.epa.gov/region09/p2)

Western Regional Pollution Prevention Network (www.westp2net.org)

Metals (mercury, copper)

National Electrical Manufacturers Association - Environment, Health and Safety (www.nema.org)

Sustainable Conservation (www.suscon.org)

- Auto Recycling Project
- Brake Pad Partnership

Pesticides and Chemical Fertilizers

Bio-Integral Resource Center (www.birc.org)

California Department of Pesticide Regulation (www.cdpr.ca.gov)

University of California Statewide IPM Program (www.ipm.ucdavis.edu/default.html)

Dioxins

Bay Area Dioxins Project (http://dioxin.abag.ca.gov/)

Building & Grounds Maintenance SC-41

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	✓
Trash	
Metals	✓
Bacteria	✓
Oil and Grease	
Organics	

Description

Stormwater runoff from building and grounds maintenance activities can be contaminated with toxic hydrocarbons in solvents, fertilizers and pesticides, suspended solids, heavy metals, abnormal pH, and oils and greases. Utilizing the protocols in this fact sheet will prevent or reduce the discharge of pollutants to stormwater from building and grounds maintenance activities by washing and cleaning up with as little water as possible, following good landscape management practices, preventing and cleaning up spills immediately, keeping debris from entering the storm drains, and maintaining the stormwater collection system.

Approach

Reduce potential for pollutant discharge through source control pollution prevention and BMP implementation. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Switch to non-toxic chemicals for maintenance when possible.
- Choose cleaning agents that can be recycled.
- Encourage proper lawn management and landscaping, including use of native vegetation.

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- Encourage use of Integrated Pest Management techniques for pest control.
- Encourage proper onsite recycling of yard trimmings.
- Recycle residual paints, solvents, lumber, and other material as much as possible.

Suggested Protocols

Pressure Washing of Buildings, Rooftops, and Other Large Objects

- In situations where soaps or detergents are used and the surrounding area is paved, pressure washers must use a water collection device that enables collection of wash water and associated solids. A sump pump, wet vacuum or similarly effective device must be used to collect the runoff and loose materials. The collected runoff and solids must be disposed of properly.
- If soaps or detergents are not used, and the surrounding area is paved, wash runoff does not have to be collected but must be screened. Pressure washers must use filter fabric or some other type of screen on the ground and/or in the catch basin to trap the particles in wash water runoff.
- If you are pressure washing on a grassed area (with or without soap), runoff must be dispersed as sheet flow as much as possible, rather than as a concentrated stream. The wash runoff must remain on the grass and not drain to pavement.

Landscaping Activities

- Dispose of grass clippings, leaves, sticks, or other collected vegetation as garbage, or by composting. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures on exposed soils.

Building Repair, Remodeling, and Construction

- Do not dump any toxic substance or liquid waste on the pavement, the ground, or toward a storm drain.
- Use ground or drop cloths underneath outdoor painting, scraping, and sandblasting work, and properly dispose of collected material daily.
- Use a ground cloth or oversized tub for activities such as paint mixing and tool cleaning.
- Clean paintbrushes and tools covered with water-based paints in sinks connected to sanitary sewers or in portable containers that can be dumped into a sanitary sewer drain. Brushes and tools covered with non-water-based paints, finishes, or other materials must be cleaned in a manner that enables collection of used solvents (e.g., paint thinner, turpentine, etc.) for recycling or proper disposal.
- Use a storm drain cover, filter fabric, or similarly effective runoff control mechanism if dust, grit, wash water, or other pollutants may escape the work area and enter a catch basin. This is particularly necessary on rainy days. The containment device(s) must be in place at the beginning of the work day, and accumulated dirty runoff and solids must be collected and disposed of before removing the containment device(s) at the end of the work day.

- If you need to de-water an excavation site, you may need to filter the water before discharging to a catch basin or off-site. If directed off-site, you should direct the water through hay bales and filter fabric or use other sediment filters or traps.
- Store toxic material under cover during precipitation events and when not in use. A cover would include tarps or other temporary cover material.

Mowing, Trimming, and Planting

- Dispose of leaves, sticks, or other collected vegetation as garbage, by composting or at a permitted landfill. Do not dispose of collected vegetation into waterways or storm drainage systems.
- Use mulch or other erosion control measures when soils are exposed.
- Place temporarily stockpiled material away from watercourses and drain inlets, and berm or cover stockpiles to prevent material releases to the storm drain system.
- Consider an alternative approach when bailing out muddy water: do not put it in the storm drain; pour over landscaped areas.
- Use hand weeding where practical.

Fertilizer and Pesticide Management

- Follow all federal, state, and local laws and regulations governing the use, storage, and disposal of fertilizers and pesticides and training of applicators and pest control advisors.
- Use less toxic pesticides that will do the job when applicable. Avoid use of copper-based pesticides if possible.
- Do not use pesticides if rain is expected.
- Do not mix or prepare pesticides for application near storm drains.
- Use the minimum amount needed for the job.
- Calibrate fertilizer distributors to avoid excessive application.
- Employ techniques to minimize off-target application (e.g., spray drift) of pesticides, including consideration of alternative application techniques.
- Apply pesticides only when wind speeds are low.
- Fertilizers should be worked into the soil rather than dumped or broadcast onto the surface.
- Irrigate slowly to prevent runoff and then only as much as is needed.
- Clean pavement and sidewalk if fertilizer is spilled on these surfaces before applying irrigation water.
- Dispose of empty pesticide containers according to the instructions on the container label.

- Use up the pesticides. Rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- Implement storage requirements for pesticide products with guidance from the local fire department and County Agricultural Commissioner. Provide secondary containment for pesticides.

Inspection

- Inspect irrigation system periodically to ensure that the right amount of water is being applied and that excessive runoff is not occurring. Minimize excess watering and repair leaks in the irrigation system as soon as they are observed.

Training

- Educate and train employees on pesticide use and in pesticide application techniques to prevent pollution.
- Train employees and contractors in proper techniques for spill containment and cleanup.
- Be sure the frequency of training takes into account the complexity of the operations and the nature of the staff.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials, such as brooms, dustpans, and vacuum sweepers (if desired) near the storage area where it will be readily accessible.
- Have employees trained in spill containment and cleanup present during the loading/unloading of dangerous wastes, liquid chemicals, or other materials.
- Familiarize employees with the Spill Prevention Control and Countermeasure Plan.
- Clean up spills immediately.

Other Considerations

Alternative pest/weed controls may not be available, suitable, or effective in many cases.

Requirements

Costs

- Cost will vary depending on the type and size of facility.
- Overall costs should be low in comparison to other BMPs.

Maintenance

Sweep paved areas regularly to collect loose particles. Wipe up spills with rags and other absorbent material immediately, do not hose down the area to a storm drain.

Supplemental Information

Further Detail of the BMP

Fire Sprinkler Line Flushing

Building fire sprinkler line flushing may be a source of non-stormwater runoff pollution. The water entering the system is usually potable water, though in some areas it may be non-potable reclaimed wastewater. There are subsequent factors that may drastically reduce the quality of the water in such systems. Black iron pipe is usually used since it is cheaper than potable piping, but it is subject to rusting and results in lower quality water. Initially, the black iron pipe has an oil coating to protect it from rusting between manufacture and installation; this will contaminate the water from the first flush but not from subsequent flushes. Nitrates, poly-phosphates and other corrosion inhibitors, as well as fire suppressants and antifreeze may be added to the sprinkler water system. Water generally remains in the sprinkler system a long time (typically a year) and between flushes may accumulate iron, manganese, lead, copper, nickel, and zinc. The water generally becomes anoxic and contains living and dead bacteria and breakdown products from chlorination. This may result in a significant BOD problem and the water often smells. Consequently dispose fire sprinkler line flush water into the sanitary sewer. Do not allow discharge to storm drain or infiltration due to potential high levels of pollutants in fire sprinkler line water.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Mobile Cleaners Pilot Program: Final Report. 1997. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Building Repair and Construction SC-42

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Recycle

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Modifications are common particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to stormwater from building repair, remodeling, and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

Approach

Pollution Prevention

- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical.
- Buy recycled products to the maximum extent practical.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.

- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.

Suggested Protocols

Repair & Remodeling

- Follow BMPs identified in Construction BMP Handbook.
- Maintain good housekeeping practices while work is underway.
- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left outside, particularly during the rainy season.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store materials properly that are normally used in repair and remodeling such as paints and solvents.
- Sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout if when repairing roofs, small particles have accumulated in the gutter. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Properly store and dispose waste materials generated from construction activities. See Construction BMP Handbook.
- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed.

Painting

- Enclose painting operations consistent with local air quality regulations and OSHA.
- Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.

- Do not transfer or load paint near storm drain inlets.
- Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is significant risk of a spill reaching storm drains.
- Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
- Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
- Capture all cleanup-water and dispose of properly.
- Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
- Store leftover paints if they are to be kept for the next job properly, or dispose properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Training

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Limitations

- This BMP is for minor construction only. The State's General Construction Activity Stormwater Permit has more requirements for larger projects. The companion "Construction Best Management Practice Handbook" contains specific guidance and best management practices for larger-scale projects.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.
- Be certain that actions to help stormwater quality are consistent with Cal- and Fed-OSHA and air quality regulations.

Requirements

Costs

These BMPs are generally low to modest in cost.

Maintenance

N/A

Supplemental Information

Further Detail of the BMP

Soil/Erosion Control

If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.

If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective "in-line" treatment devices. See Treatment Control Fact Sheet TC-20 Wet Pond/Basin in Section 5 of the New Development and Redevelopment Handbook regarding design criteria. Include in the catch basin a "turn-down" elbow or similar device to trap floatables.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Parking/Storage Area Maintenance SC-43

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	✓
Bacteria	
Oil and Grease	✓
Organics	✓

Description

Parking lots and storage areas can contribute a number of substances, such as trash, suspended solids, hydrocarbons, oil and grease, and heavy metals that can enter receiving waters through stormwater runoff or non-stormwater discharges. The protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants from parking/storage areas and include using good housekeeping practices, following appropriate cleaning BMPs, and training employees.

Approach

The goal of this program is to ensure stormwater pollution prevention practices are considered when conducting activities on or around parking areas and storage areas to reduce potential for pollutant discharge to receiving waters. Successful implementation depends on effective training of employees on applicable BMPs and general pollution prevention strategies and objectives.

Pollution Prevention

- Encourage alternative designs and maintenance strategies for impervious parking lots. (See New Development and Redevelopment BMP Handbook)
- Keep accurate maintenance logs to evaluate BMP implementation.

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SC-43 Parking/Storage Area Maintenance

Suggested Protocols

General

- Keep the parking and storage areas clean and orderly. Remove debris in a timely fashion.
- Allow sheet runoff to flow into biofilters (vegetated strip and swale) and/or infiltration devices.
- Utilize sand filters or oleophilic collectors for oily waste in low quantities.
- Arrange rooftop drains to prevent drainage directly onto paved surfaces.
- Design lot to include semi-permeable hardscape.
- Discharge soapy water remaining in mop or wash buckets to the sanitary sewer through a sink, toilet, clean-out, or wash area with drain.

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide an adequate number of litter receptacles.
- Clean out and cover litter receptacles frequently to prevent spillage.
- Provide trash receptacles in parking lots to discourage litter.
- Routinely sweep, shovel, and dispose of litter in the trash.

Surface Cleaning

- Use dry cleaning methods (e.g., sweeping, vacuuming) to prevent the discharge of pollutants into the stormwater conveyance system if possible.
- Establish frequency of public parking lot sweeping based on usage and field observations of waste accumulation.
- Sweep all parking lots at least once before the onset of the wet season.
- Follow the procedures below if water is used to clean surfaces:
  - Block the storm drain or contain runoff.
  - Collect and pump wash water to the sanitary sewer or discharge to a pervious surface. Do not allow wash water to enter storm drains.
  - Dispose of parking lot sweeping debris and dirt at a landfill.
- Follow the procedures below when cleaning heavy oily deposits:
  - Clean oily spots with absorbent materials.
  - Use a screen or filter fabric over inlet, then wash surfaces.

- Do not allow discharges to the storm drain.
- Vacuum/pump discharges to a tank or discharge to sanitary sewer.
- Appropriately dispose of spilled materials and absorbents.

Surface Repair

- Preheat, transfer or load hot bituminous material away from storm drain inlets.
- Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff.
- Cover and seal nearby storm drain inlets where applicable (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal.
- Use only as much water as necessary for dust control, to avoid runoff.
- Catch drips from paving equipment that is not in use with pans or absorbent material placed under the machines. Dispose of collected material and absorbents properly.

Inspection

- Have designated personnel conduct inspections of parking facilities and stormwater conveyance systems associated with parking facilities on a regular basis.
- Inspect cleaning equipment/sweepers for leaks on a regular basis.

Training

- Provide regular training to field employees and/or contractors regarding cleaning of paved areas and proper operation of equipment.
- Train employees and contractors in proper techniques for spill containment and cleanup.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible or at a central location.
- Clean up fluid spills immediately with absorbent rags or material.
- Dispose of spilled material and absorbents properly.

Other Considerations

Limitations related to sweeping activities at large parking facilities may include high equipment costs, the need for sweeper operator training, and the inability of current sweeper technology to remove oil and grease.

SC-43 Parking/Storage Area Maintenance

Requirements

Costs

Cleaning/sweeping costs can be quite large. Construction and maintenance of stormwater structural controls can be quite expensive as well.

Maintenance

- Sweep parking lot regularly to minimize cleaning with water.
- Clean out oil/water/sand separators regularly, especially after heavy storms.
- Clean parking facilities regularly to prevent accumulated wastes and pollutants from being discharged into conveyance systems during rainy conditions.

Supplemental Information

Further Detail of the BMP

Surface Repair

Apply concrete, asphalt, and seal coat during dry weather to prevent contamination from contacting stormwater runoff. Where applicable, cover and seal nearby storm drain inlets (with waterproof material or mesh) and manholes before applying seal coat, slurry seal, etc. Leave covers in place until job is complete and all water from emulsified oil sealants has drained or evaporated. Clean any debris from these covered manholes and drains for proper disposal. Only use only as much water as is necessary for dust control to avoid runoff.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Pollution from Surface Cleaning Folder. 1996. Bay Area Stormwater Management Agencies Association (BASMAA). http://www.basmaa.org/

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net/

Drainage System Maintenance SC-44

Objectives

- Cover
- Contain
- Educate
- Reduce/Minimize

Targeted Constituents

Sediment	✓
Nutrients	
Trash	✓
Metals	
Bacteria	✓
Oil and Grease	
Organics	

Description

As a consequence of its function, the stormwater conveyance system collects and transports urban runoff and stormwater that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

Approach

Pollution Prevention

Maintain catch basins, stormwater inlets, and other stormwater conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

- Staff should regularly inspect facilities to ensure compliance with the following:
  - Immediate repair of any deterioration threatening structural integrity.
  - Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
  - Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).

- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.
- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Pump Stations

- Clean all storm drain pump stations prior to the wet season to remove silt and trash.
- Do not allow discharge to reach the storm drain system when cleaning a storm drain pump station or other facility.
- Conduct routine maintenance at each pump station.
- Inspect, clean, and repair as necessary all outlet structures prior to the wet season.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. Any person, government agency, or public utility proposing an activity that will change the natural (emphasis added) state of any river, stream, or lake in California, must enter into a Steam or Lake Alteration Agreement with the Department of Fish and Game. The developer-applicant should also contact local governments (city, county, special districts), other state agencies (SWRCB, RWQCB, Department of Forestry, Department of Water Resources), and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
  - Is there evidence of spills such as paints, discoloring, etc?

- Are there any odors associated with the drainage system?
- Record locations of apparent illegal discharges/illicit connections?
- Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
- Eliminate the discharge once the origin of flow is established.

- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
  - Illegal dumping hot spots
  - Types and quantities (in some cases) of wastes
  - Patterns in time of occurrence (time of day/night, month, or year)
  - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
  - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.
- Refer to fact sheet SC-10 Non-Stormwater Discharges.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
  - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).

- OSHA Confined Space Entry training (Cal-OSHA Confined Space, Title 8 and Federal OSHA 29 CFR 1910.146).
- Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.
- Refer to fact sheet SC-11 Spill Prevention, Control, and Cleanup.

Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

Requirements

Costs

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:
  - Purchase and installation of signs.
  - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.
  - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.
  - Purchase of landfill space to dispose of illegally-dumped items and material.

- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vactor trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

Supplemental Information

Further Detail of the BMP

Storm Drain Flushing

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging.

Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of stormwater pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

References and Resources

California's Nonpoint Source Program Plan http://www.swrcb.ca.gov/nps/index.html

Clark County Storm Water Pollution Control Manual
http://www.co.clark.wa.us/pubworks/bmpman.pdf

Ferguson, B.K. 1991. Urban Stream Reclamation, p. 324-322, Journal of Soil and Water Conservation.

King County Storm Water Pollution Control Manual http://dnr.metrokc.gov/wlr/dss/spcm.htm

Oregon Association of Clean Water Agencies. Oregon Municipal Stormwater Toolbox for Maintenance Practices. June 1998.

Santa Clara Valley Urban Runoff Pollution Prevention Program http://www.scvurppp.org

The Storm Water Managers Resource Center http://www.stormwatercenter.net

United States Environmental Protection Agency (USEPA). 2002. Pollution Prevention/Good Housekeeping for Municipal Operations Storm Drain System Cleaning. On line:
http://www.epa.gov/npdes/menuofbmps/poll_16.htm

Drain Insert MP-52

General Description

Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris. There are a multitude of inserts of various shapes and configurations, typically falling into one of three different groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are one box; that is, the setting area and filtration through media occur in the same box. Some products consist of one or more trays or mesh grates. The trays may hold different types of media. Filtration media vary by manufacturer. Types include polypropylene, porous polymer, treated cellulose, and activated carbon.

Inspection/Maintenance Considerations

Washout problems increase with rain intensity. Susceptibility of accumulated sediments to be re-suspended at low flow rates, can be corrected with an energy dissipater between gate and treatment areas.

Inspection Activities	Suggested Frequency
■ Inspect for sediment buildup and proper functioning.	At the beginning of the wet season and after significant storms
■ Verify that stormwater enters the unit and does not leak around the perimeter.	After construction.
Maintenance Activities	**Suggested Frequency**
■ Remove sediment as needed.	At the beginning of the wet season and as necessary

Maintenance Concerns, Objectives, and Goals

■ Sediment Removal

Targeted Constituents

✓ Sediment
✓ Nutrients
✓ Trash
✓ Metals
Bacteria
✓ Oil and Grease
✓ Organics

Removal Effectiveness

See New Development and Redevelopment Handbook-Section 5.

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Efficient Irrigation SD-12

Design Objectives

- ☑ Maximize Infiltration
- ☑ Provide Retention
- ☑ Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems.

Approach

Project plan designs for development and redevelopment should include application methods of irrigation water that minimize runoff of excess irrigation water into the stormwater conveyance system.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Designing New Installations

The following methods to reduce excessive irrigation runoff should be considered, and incorporated and implemented where determined applicable and feasible by the Permittee:

- Employ rain-triggered shutoff devices to prevent irrigation after precipitation.
- Design irrigation systems to each landscape area's specific water requirements.
- Include design featuring flow reducers or shutoff valves triggered by a pressure drop to control water loss in the event of broken sprinkler heads or lines.
- Implement landscape plans consistent with County or City water conservation resolutions, which may include provision of water sensors, programmable irrigation times (for short cycles), etc.

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- Design timing and application methods of irrigation water to minimize the runoff of excess irrigation water into the storm water drainage system.
- Group plants with similar water requirements in order to reduce excess irrigation runoff and promote surface filtration. Choose plants with low irrigation requirements (for example, native or drought tolerant species). Consider design features such as:
  - Using mulches (such as wood chips or bar) in planter areas without ground cover to minimize sediment in runoff
  - Installing appropriate plant materials for the location, in accordance with amount of sunlight and climate, and use native plant materials where possible and/or as recommended by the landscape architect
  - Leaving a vegetative barrier along the property boundary and interior watercourses, to act as a pollutant filter, where appropriate and feasible
  - Choosing plants that minimize or eliminate the use of fertilizer or pesticides to sustain growth
- Employ other comparable, equally effective methods to reduce irrigation water runoff.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Storm Drain Signage SD-13

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

Description

Waste materials dumped into storm drain inlets can have severe impacts on receiving and ground waters. Posting notices regarding discharge prohibitions at storm drain inlets can prevent waste dumping. Storm drain signs and stencils are highly visible source controls that are typically placed directly adjacent to storm drain inlets.

Approach

The stencil or affixed sign contains a brief statement that prohibits dumping of improper materials into the urban runoff conveyance system. Storm drain messages have become a popular method of alerting the public about the effects of and the prohibitions against waste disposal.

Suitable Applications

Stencils and signs alert the public to the destination of pollutants discharged to the storm drain. Signs are appropriate in residential, commercial, and industrial areas, as well as any other area where contributions or dumping to storm drains is likely.

Design Considerations

Storm drain message markers or placards are recommended at all storm drain inlets within the boundary of a development project. The marker should be placed in clear sight facing toward anyone approaching the inlet from either side. All storm drain inlet locations should be identified on the development site map.

Designing New Installations

The following methods should be considered for inclusion in the project design and show on project plans:

- Provide stenciling or labeling of all storm drain inlets and catch basins, constructed or modified, within the project area with prohibitive language. Examples include “NO DUMPING

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– DRAINS TO OCEAN" and/or other graphical icons to discourage illegal dumping.

- Post signs with prohibitive language and/or graphical icons, which prohibit illegal dumping at public access points along channels and creeks within the project area.

Note - Some local agencies have approved specific signage and/or storm drain message placards for use. Consult local agency stormwater staff to determine specific requirements for placard types and methods of application.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. If the project meets the definition of "redevelopment", then the requirements stated under " designing new installations" above should be included in all project design plans.

Additional Information

Maintenance Considerations

- Legibility of markers and signs should be maintained. If required by the agency with jurisdiction over the project, the owner/operator or homeowner's association should enter into a maintenance agreement with the agency or record a deed restriction upon the property title to maintain the legibility of placards or signs.

Placement

- Signage on top of curbs tends to weather and fade.

- Signage on face of curbs tends to be worn by contact with vehicle tires and sweeper brooms.

Supplemental Information

Examples

- Most MS4 programs have storm drain signage programs. Some MS4 programs will provide stencils, or arrange for volunteers to stencil storm drains as part of their outreach program.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Maintenance Bays & Docks SD-31

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- ☑ Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Several measures can be taken to prevent operations at maintenance bays and loading docks from contributing a variety of toxic compounds, oil and grease, heavy metals, nutrients, suspended solids, and other pollutants to the stormwater conveyance system.

Approach

In designs for maintenance bays and loading docks, containment is encouraged. Preventative measures include overflow containment structures and dead-end sumps. However, in the case of loading docks from grocery stores and warehouse/distribution centers, engineered infiltration systems may be considered.

Suitable Applications

Appropriate applications include commercial and industrial areas planned for development or redevelopment.

Design Considerations

Design requirements for vehicle maintenance and repair are governed by Building and Fire Codes, and by current local agency ordinances, and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code requirements.

Designing New Installations

Designs of maintenance bays should consider the following:

- Repair/maintenance bays and vehicle parts with fluids should be indoors; or designed to preclude urban run-on and runoff.
- Repair/maintenance floor areas should be paved with Portland cement concrete (or equivalent smooth impervious surface).

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- Repair/maintenance bays should be designed to capture all wash water leaks and spills. Provide impermeable berms, drop inlets, trench catch basins, or overflow containment structures around repair bays to prevent spilled materials and wash-down waters form entering the storm drain system. Connect drains to a sump for collection and disposal. Direct connection of the repair/maintenance bays to the storm drain system is prohibited. If required by local jurisdiction, obtain an Industrial Waste Discharge Permit.

- Other features may be comparable and equally effective.

The following designs of loading/unloading dock areas should be considered:

- Loading dock areas should be covered, or drainage should be designed to preclude urban run-on and runoff.

- Direct connections into storm drains from depressed loading docks (truck wells) are prohibited.

- Below-grade loading docks from grocery stores and warehouse/distribution centers of fresh food items should drain through water quality inlets, or to an engineered infiltration system, or an equally effective alternative. Pre-treatment may also be required.

- Other features may be comparable and equally effective.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Stormwater and non-stormwater will accumulate in containment areas and sumps with impervious surfaces. Contaminated accumulated water must be disposed of in accordance with applicable laws and cannot be discharged directly to the storm drain or sanitary sewer system without the appropriate permit.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

Trash Storage Areas SD-32

Design Objectives

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Land Coverage
- Prohibit Dumping of Improper Materials
- ☑ Contain Pollutants
- Collect and Convey

Description

Trash storage areas are areas where a trash receptacle (s) are located for use as a repository for solid wastes. Stormwater runoff from areas where trash is stored or disposed of can be polluted. In addition, loose trash and debris can be easily transported by water or wind into nearby storm drain inlets, channels, and/or creeks. Waste handling operations that may be sources of stormwater pollution include dumpsters, litter control, and waste piles.

Approach

This fact sheet contains details on the specific measures required to prevent or reduce pollutants in stormwater runoff associated with trash storage and handling. Preventative measures including enclosures, containment structures, and impervious pavements to mitigate spills, should be used to reduce the likelihood of contamination.

Suitable Applications

Appropriate applications include residential, commercial and industrial areas planned for development or redevelopment. (Detached residential single-family homes are typically excluded from this requirement.)

Design Considerations

Design requirements for waste handling areas are governed by Building and Fire Codes, and by current local agency ordinances and zoning requirements. The design criteria described in this fact sheet are meant to enhance and be consistent with these code and ordinance requirements. Hazardous waste should be handled in accordance with legal requirements established in Title 22, California Code of Regulation.

Wastes from commercial and industrial sites are typically hauled by either public or commercial carriers that may have design or access requirements for waste storage areas. The design criteria in this fact sheet are recommendations and are not intended to be in conflict with requirements established by the waste hauler. The waste hauler should be contacted prior to the design of your site trash collection areas. Conflicts or issues should be discussed with the local agency.

Designing New Installations

Trash storage areas should be designed to consider the following structural or treatment control BMPs:

- Design trash container areas so that drainage from adjoining roofs and pavement is diverted around the area(s) to avoid run-on. This might include berming or grading the waste handling area to prevent run-on of stormwater.
- Make sure trash container areas are screened or walled to prevent off-site transport of trash.

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- Use lined bins or dumpsters to reduce leaking of liquid waste.
- Provide roofs, awnings, or attached lids on all trash containers to minimize direct precipitation and prevent rainfall from entering containers.
- Pave trash storage areas with an impervious surface to mitigate spills.
- Do not locate storm drains in immediate vicinity of the trash storage area.
- Post signs on all dumpsters informing users that hazardous materials are not to be disposed of therein.

Redeveloping Existing Installations

Various jurisdictional stormwater management and mitigation plans (SUSMP, WQMP, etc.) define "redevelopment" in terms of amounts of additional impervious area, increases in gross floor area and/or exterior construction, and land disturbing activities with structural or impervious surfaces. The definition of " redevelopment" must be consulted to determine whether or not the requirements for new development apply to areas intended for redevelopment. If the definition applies, the steps outlined under "designing new installations" above should be followed.

Additional Information

Maintenance Considerations

The integrity of structural elements that are subject to damage (i.e., screens, covers, and signs) must be maintained by the owner/operator. Maintenance agreements between the local agency and the owner/operator may be required. Some agencies will require maintenance deed restrictions to be recorded of the property title. If required by the local agency, maintenance agreements or deed restrictions must be executed by the owner/operator before improvement plans are approved.

Other Resources

A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP), Los Angeles County Department of Public Works, May 2002.

Model Standard Urban Storm Water Mitigation Plan (SUSMP) for San Diego County, Port of San Diego, and Cities in San Diego County, February 14, 2002.

Model Water Quality Management Plan (WQMP) for County of Orange, Orange County Flood Control District, and the Incorporated Cities of Orange County, Draft February 2003.

Ventura Countywide Technical Guidance Manual for Stormwater Quality Control Measures, July 2002.

APPENDIX F

Infiltration Report

May 22, 2018

DPIF2 CA 11 Irwindale, LLC
4695 MacAuthur Court, 11th Floor
Newport Beach, California 92660

Attention: Mr. Scott Strine
Senior Vice President – Capital Deployment

Project No.: **18G145-2**

Subject: **Results of Infiltration Testing**
Proposed Warehouse
13131 Los Angeles Street
Irwindale, California

Reference: Geotechnical Investigation, Proposed Warehouse, 13131 Los Angeles Street, Irwindale, California, prepared for DPIF2 CA 11 Irwindale, LLC, by Southern California Geotechnical, Inc. (SCG), SCG Project No. 18G145-1.

Gentlemen:

In accordance with your request, we have conducted infiltration testing at the subject site. We are pleased to present this report summarizing the results of the infiltration testing and our design recommendations.

Scope of Services

The scope of services performed for this project was in general accordance with our Change Order 18G145-CO, dated April 26, 2018. The scope of services included site reconnaissance, subsurface exploration, field testing, and engineering analysis to determine the infiltration rates of the onsite soils. The infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Site and Project Description

The subject site is located on the north side of Los Angeles Street, at the street address of 13131 Los Angeles Street in Irwindale, California. The site is bounded to the north by Rivergrade Road, to the east and west by commercial/industrial developments, and to the south by Los Angeles Street. The general location of the site is illustrated on the Site Location Map, enclosed as Plate 1 of this report.

The site is an irregular-shaped parcel, approximately 24.9 acres in size. The site was previously operated by Hanson Structural Precast, which is no longer operational. The site is developed with two (2) industrial buildings, 3,800 and 9,768± ft² in size, located in the southern area of the site. The building located in the southwestern area of the site is a two-story structure of brick and mortar construction. The building located in the south-central area of the site is of concrete tilt-up construction and contains two (2) concrete canopies located to the north and

east of the building. Both of these structures are assumed to be supported on conventional shallow foundations with concrete slab-on-grade floors. There are three (3) office trailers located in the southwestern area of the site with several small wooden shacks located throughout the site. Cranes, hoppers, conveyors, and other various manufacturing equipment are located in the central area of the site. There is also an underground hopper, which extends approximately 15 feet below the ground surface, located in the central area of the site. The ground surface cover generally consists of crushed aggregate base (CAB) throughout the majority of the site. Ground surface cover surrounding the buildings in the southern area of the site consists of asphaltic concrete pavements. Portland cement concrete (PCC) casting beds and slabs are also located throughout the site. The pavements are in poor condition with areas of moderate to severe cracking throughout. Ground surface cover also consists of sparse native grass and weed growth along the property lines and in the northeastern corner of the site. There are several trees located near the existing buildings, along the eastern property line, and in the north-central area of the site.

Detailed topographic information was not available at the time of this report. However, based on topographic information obtained from Google Earth, the site topography ranges from 364± feet mean sea level (msl) in the northern area of the site to 346± feet msl in the southern area of the site. The site topography slopes gently downward toward the south at a gradient of approximately 1 percent.

Proposed Development

A conceptual site plan (Scheme 3), which was prepared by HPA Architecture, was provided to our office. Based on this plan, the site will be developed with one (1) new warehouse. The warehouse will be 522,410± ft^2 in size located in the south-central area of the site. Loading docks will be constructed along the northern and western sides of the building. The building will be surrounded by asphaltic concrete pavements in the automobile parking and drive areas, and Portland cement concrete pavements in the loading dock and truck traffic areas. Areas of landscaped planters and concrete flatwork are also expected throughout the site. All of the existing buildings and manufacturing equipment will be demolished to facilitate the new construction.

We understand that the proposed development will include on-site infiltration to dispose of storm water. Based on infiltration testing information provided by Mr. Brian Thienes of Thienes Engineering, Inc., the project civil engineer, the proposed infiltration system will consist of a below-grade chamber system located in the southwestern area of the site. The bottom of the chamber system will extend to a depth 8± feet below the existing site grades.

Concurrent Study

Southern California Geotechnical, Inc. (SCG) recently conducted a geotechnical investigation at the subject site. As a part of this study, three (3) borings were advanced to depths of 50± feet below existing site grades. In addition to the three borings, fifteen (15) trenches were excavated at the site to depths of 5 to 10± feet below existing site grades.

Asphaltic concrete pavements were encountered at the ground surface at one of the trench locations. At this location, the pavement section consists of 2± inches of asphaltic concrete with

no discernable layer of underlying aggregate base. One of the borings encountered a surficial layer of pea gravel at the ground surface measuring approximately 1 inch in thickness, underlain by 6± inches of underlying aggregate base. All but two (2) trenches and two (2) of the borings were drilled/excavated in areas developed with a layer of cement treated aggregate base. At these locations, the base layer measures 8 to 18± inches thick. Native alluvial soils were encountered at the ground surface at one of the trench locations and beneath the pavements or aggregate base at all of the boring and trench locations, extending to the maximum depth explored of 50± feet. The alluvium generally consists of dense to very dense gravelly fine to coarse sands to fine to coarse sandy gravels and fine to medium sands with occasional to extensive cobbles and occasional boulders. One of the borings encountered a layer of silty fine sand with trace amounts of medium to coarse sands at depths of 27 to 29½± feet below existing site grades.

Groundwater

Free water was not encountered during drilling of any of the borings. Based on the lack of any water within the borings and the moisture contents of the recovered soil samples, the static groundwater table is considered to have existed at a depth in excess of 50± feet at the time of the subsurface exploration. As part of our research, we reviewed available groundwater data in order to determine the historic high groundwater level for the site. The primary reference used to determine the historic groundwater depths in this area is CGS Open File Report 98-13, the Seismic Hazard Evaluation of the Baldwin Park Quadrangle which indicates that the historic high groundwater level for the site was 35± feet below the ground surface.

Subsurface Exploration

Scope of Exploration

The subsurface exploration for the infiltration testing consisted of two (2) backhoe excavated trenches, extending to depths of 8± feet below existing site grades. The trenches were logged during excavation by a member of our staff. The approximate locations of the infiltration trenches (identified as I-1 and I-2) are indicated on the Infiltration Test Location Plan, enclosed as Plate 2 of this report.

Geotechnical Conditions

A layer of cement treated aggregate base was encountered at the ground surface at both of the infiltration trench locations. At these locations, the base layer measures 5± inches in thickness. Artificial fill soils were encountered beneath the aggregate base layer at both infiltration trench locations, extending 1½ to 2± feet below existing site grades. The fill soils generally consist of medium dense to dense silty fine to medium sands with varying amounts of coarse sand and fine to coarse gravel. The fill soils possess a disturbed appearance and trace amounts of glass fragments at Infiltration Trench No. I-1, resulting in their classification as artificial fill.

Native alluvium was encountered beneath the artificial fill soils at both of the infiltration trench locations, extending at least 8± feet below existing site grades. The alluvial soils generally consist of loose to very dense fine to medium sands, gravelly fine to coarse sands, and fine to

coarse sandy gravel with occasional to extensive cobbles. The Trench Logs, which illustrate the conditions encountered at the infiltration test locations, are included with this report.

Infiltration Testing

We understand that the results of the testing will be used to prepare a preliminary design for the storm water infiltration system that will be used at the subject site. As previously mentioned, the infiltration testing was performed in general accordance with ASTM Test Method D-3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer.

Two stainless steel infiltration rings were used for the infiltration testing. The outer infiltration ring is 2 feet in diameter and 20 inches in height. The inner infiltration ring is 1 foot in diameter and 20 inches in height. At the test locations, the outer ring was driven 3± inches into the soil at the base of each trench. The inner ring was centered inside the outer ring and subsequently driven 3± inches into the soil at the base of the trench. The rings were driven into the soil using a ten-pound sledge hammer. The soil surrounding the wall of the infiltration rings was only slightly disturbed during the driving process.

Infiltration Testing Procedure

Infiltration testing was performed at both of the test locations. The infiltration testing consisted of filling the inner ring and the annular space (the space between the inner and outer rings) with water, approximately 3 to 4 inches above the soil. To prevent the flow of water from one ring to the other, the water level in both the inner ring and the annular space between the rings was maintained using constant-head float valves. The volume of water that was added to maintain a constant head in the inner ring and the annular space during each time interval was determined and recorded. A cap was placed over the rings to minimize the evaporation of water during the tests.

The schedule for readings was determined based on the observed soil type at the base of each backhoe-excavated trench. Based on the existing soils at each infiltration test location, the volumetric measurements were made at increments of 5 minutes. In accordance with the City of Irwindale's guidelines for storm water infiltration testing, the testing was conducted for a total duration of 4 hours at both of the test locations. The water volume measurements are presented on the spreadsheets enclosed with this report. The infiltration rate for each of the timed intervals are also tabulated on these spreadsheets.

The infiltration rates for the infiltration tests are calculated in centimeters per hour and then converted to inches per hour. The rates are summarized below:

Infiltration Test No.	Depth (feet)	Soil Description	Infiltration Rate (inches/hour)
I-1	8	Gravelly fine to coarse Sand	20.1
I-2	8	Gravelly fine to coarse Sand	21.0

Laboratory Testing

In-situ Moisture Content

The moisture contents for selected soil samples within the trenches were determined in accordance with ASTM D-2216 and are expressed as a percentage of the dry weight. These test results are presented on the Trench Logs.

Grain Size Analysis

The grain size distribution of selected soils collected from the base of each infiltration test trench has been determined using a range of wire mesh screens. These tests were performed in general accordance with ASTM D-422 and/or ASTM D-1140. The weight of the portion of the sample retained on each screen is recorded and the percentage finer or coarser of the total weight is calculated. The results of the grainsize analysis are presented on Plates C-1 and C-2 of this report.

Design Recommendations

Two (2) infiltration tests were performed at the subject site. As noted above, the calculated infiltration rates at the infiltration test locations are 20.1 and 21.0 inches per hour. **Based on the infiltration test results, we recommend a design infiltration rate of 20.0 inches per hour be used for the proposed below-grade chamber system located in the southwestern area of the subject site.**

The design of the proposed storm water infiltration system should be performed by the project civil engineer, in accordance with the City of Irwindale and/or County of Los Angeles guidelines. However, it is recommended that the system be constructed so as to facilitate removal of silt and clay, or other deleterious materials from any water that may enter the system. The presence of such materials would decrease the effective infiltration rate. **It is recommended that the project civil engineer apply an appropriate factor of safety. The infiltration rate recommended above is based on the assumption that only clean water will be introduced to the subsurface profile. Any fines, debris, or organic materials could significantly impact the infiltration rates.** It should be noted that the recommended infiltration rate is based on infiltration testing at two (2) discrete locations and the overall infiltration rate of the storm water infiltration system could vary considerably.

Infiltration versus Permeability

Infiltration rates are based on unsaturated flow. As water is introduced into soils by infiltration, the soils become saturated and the wetting front advances from the unsaturated zone to the saturated zone. Once the soils become saturated, infiltration rates become zero, and water can only move through soils by hydraulic conductivity at a rate determined by pressure head and soil permeability. The infiltration rates presented herein were determined in accordance with the ASTM Test Method D-3385-03 standard and are considered valid for the time and place of the actual test. Changes in soil moisture content will affect these infiltration rates. Infiltration rates should be expected to decrease until the soils become saturated. Soil permeability values will then govern groundwater movement. Permeability values may be on the order of 10 to 20 times

less than infiltration rates. The system designer should incorporate adequate factors of safety and allow for overflow design into appropriate traditional storm drain systems, which would transport storm water off-site.

Location of Infiltration Systems

The use of on-site storm water infiltration systems carries a risk of creating adverse geotechnical conditions. Increasing the moisture content of the soil can cause the soil to lose internal shear strength and increase its compressibility, resulting in a change in the designed engineering properties. Overlying structures and pavements in the infiltration areas could potentially be damaged due to saturation of subgrade soils. **The proposed infiltration system for this site should be located at least 25 feet away from any structures, including retaining walls.** Even with this provision of locating the infiltration system at least 25 feet from the building, it is possible that infiltrating water into the subsurface soils could have an adverse effect on the proposed or existing structures. It should also be noted that utility trenches which happen to collect storm water can also serve as conduits to transmit storm water toward the structure, depending on the slope of the utility trench. Therefore, consideration should also be given to the proposed locations of underground utilities which may pass near the proposed infiltration system.

General Comments

This report has been prepared as an instrument of service for use by the client in order to aid in the evaluation of this property and to assist the architects and engineers in the design and preparation of the project plans and specifications. This report may be provided to the contractor(s) and other design consultants to disclose information relative to the project. However, this report is not intended to be utilized as a specification in and of itself, without appropriate interpretation by the project architect, structural engineer, and/or civil engineer. The design of the infiltration system is the responsibility of the civil engineer. The role of the geotechnical engineer is limited to determination of infiltration rate only. By using the design infiltration rates contained herein, the civil engineer agrees to indemnify, defend, and hold harmless the geotechnical engineer for all aspects of the design and performance of the infiltration system. The reproduction and distribution of this report must be authorized by the client and Southern California Geotechnical, Inc. Furthermore, any reliance on this report by an unauthorized third party is at such party's sole risk, and we accept no responsibility for damage or loss which may occur.

The analysis of this site was based on a subsurface profile interpolated from limited discrete soil samples. While the materials encountered in the project area are considered to be representative of the total area, some variations should be expected between trench locations and testing depths. If the conditions encountered during construction vary significantly from those detailed herein, we should be contacted immediately to determine if the conditions alter the recommendations contained herein.

This report has been based on assumed or provided characteristics of the proposed development. It is recommended that the owner, client, architect, structural engineer, and civil engineer carefully review these assumptions to ensure that they are consistent with the characteristics of the proposed development. If discrepancies exist, they should be brought to

our attention to verify that they do not affect the conclusions and recommendations contained herein. We also recommend that the project plans and specifications be submitted to our office for review to verify that our recommendations have been correctly interpreted. The analysis, conclusions, and recommendations contained within this report have been promulgated in accordance with generally accepted professional geotechnical engineering practice. No other warranty is implied or expressed.

Closure

We sincerely appreciate the opportunity to be of service on this project. We look forward to providing additional consulting services during the course of the project. If we may be of further assistance in any manner, please contact our office.

Respectfully Submitted,

SOUTHERN CALIFORNIA GEOTECHNICAL, INC.

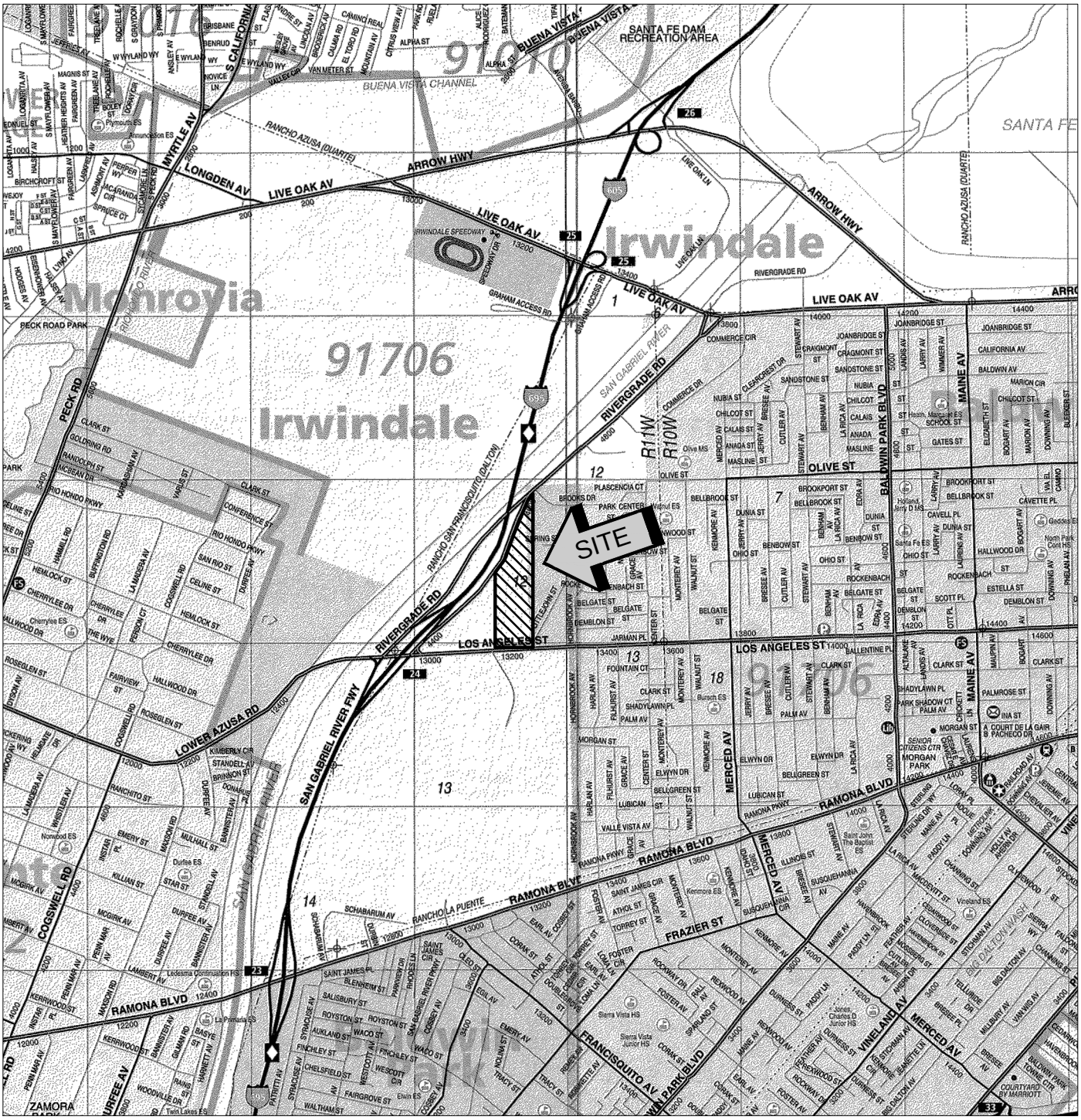
Scott McCann
Staff Scientist

Robert G. Trazo, GE 2655
Project Engineer

REGISTERED PROFESSIONAL ENGINEER
ROBERT TRAZO
No. 2655
GEOTECHNICAL
STATE OF CALIFORNIA

Distribution: (1) Addressee

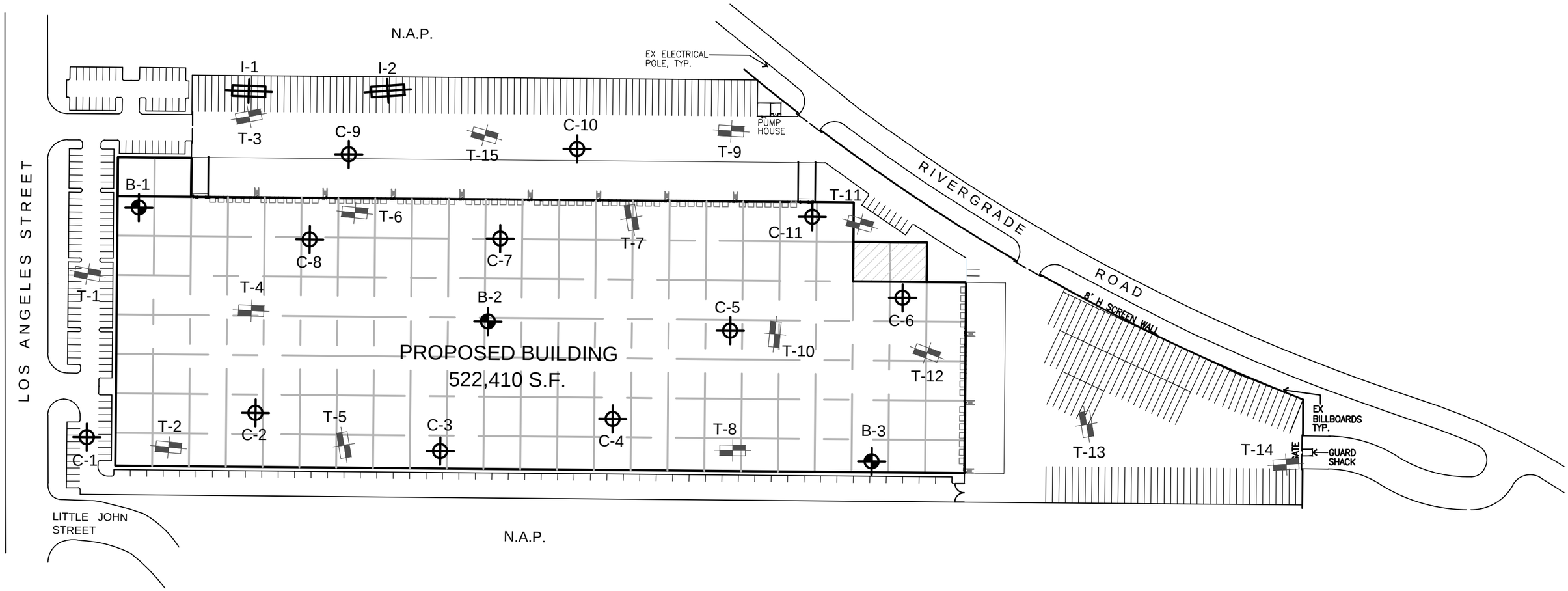
Enclosures: Plate 1 - Site Location Map
Plate 2 - Infiltration Test Location Plan
Trench Logs (2 pages)
Infiltration Test Results Spreadsheets (4 pages)
Grain Size Distribution Graphs (2 pages)



SOURCE: LOS ANGELES COUNTY
THOMAS GUIDE, 2013

SITE LOCATION MAP
PROPOSED WAREHOUSE
IRWINDALE, CALIFORNIA
SCALE: 1" = 2400'
DRAWN: AL CHKD: RGT
SCG PROJECT 18G145-2
PLATE 1

SOUTHERN CALIFORNIA GEOTECHNICAL



GEOTECHNICAL LEGEND

- APPROXIMATE INFILTRATION TEST LOCATION
- APPROXIMATE BORING LOCATION FROM CONCURRENT STUDY (SCG PROJECT NO. 18G151-1)
- APPROXIMATE CORE LOCATION FROM CONCURRENT STUDY (SCG PROJECT NO. 18G151-1)
- APPROXIMATE TRENCH LOCATION FROM CONCURRENT STUDY (SCG PROJECT NO. 18G151-1)

NORTH
SoCalGeo

NOTE: SITE PLAN PREPARED BY HPA ARCHITECTURE.

INFILTRATION TEST LOCATION PLAN

PROPOSED WAREHOUSE

IRWINDALE, CALIFORNIA

SCALE: 1" = 150'

DRAWN: AL
CHKD: RGT

SCG PROJECT
18G145-2

PLATE 2

SoCalGeo

SOUTHERN CALIFORNIA GEOTECHNICAL

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-1

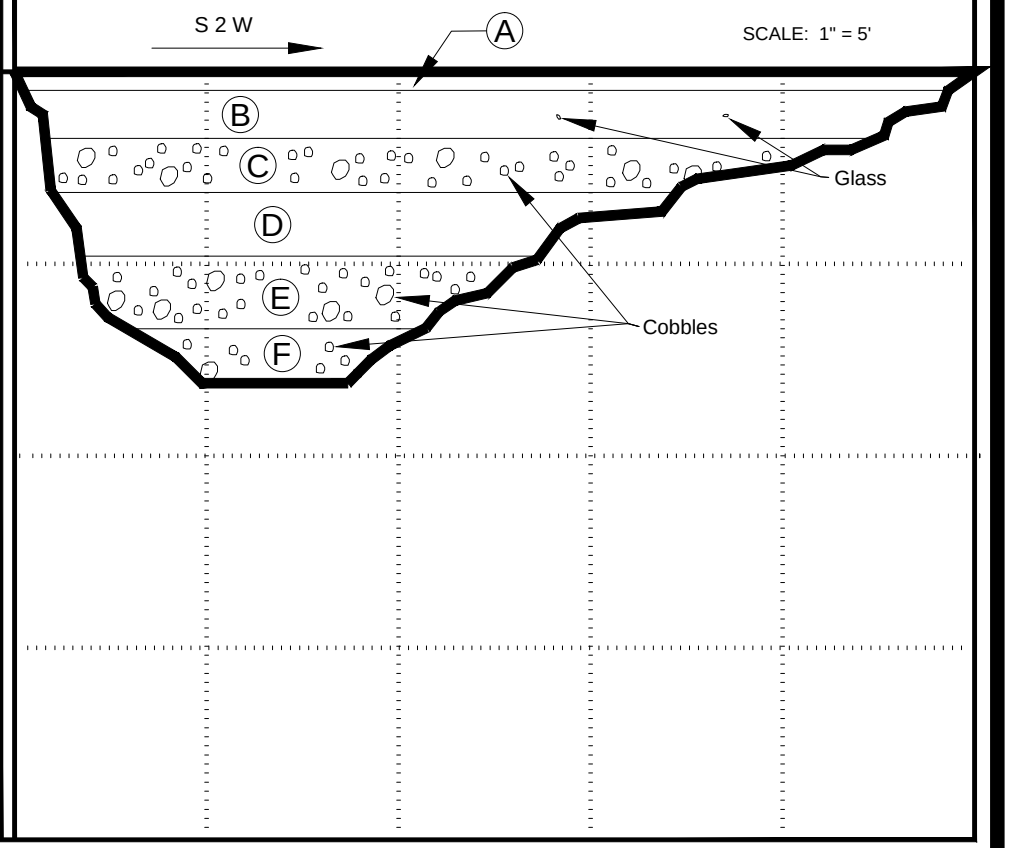
JOB NO.: 18G145-2
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-2-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: S 2 W
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		1	A: AGGREGATE BASE (AB): 5 inches thick (Cement Treated) B: FILL: Light Brown Silty fine to coarse Sand, little fine to coarse Gravel, trace Glass fragments, medium dense to dense - dry to damp
	b		1	C: ALLUVIUM: Light Gray fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry D: ALLUVIUM: Light Gray fine to medium Sand, trace coarse Sand, trace fine Gravel, loose to medium dense - dry to damp
5				E: ALLUVIUM: Light Gray fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry
	b		1	F: ALLUVIUM: Light Gray Brown Gravelly fine to coarse Sand, occasional to extensive Cobbles, dense - dry
				Trench Terminated @ 8 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-1

SOUTHERN CALIFORNIA GEOTECHNICAL

TRENCH NO. I-2

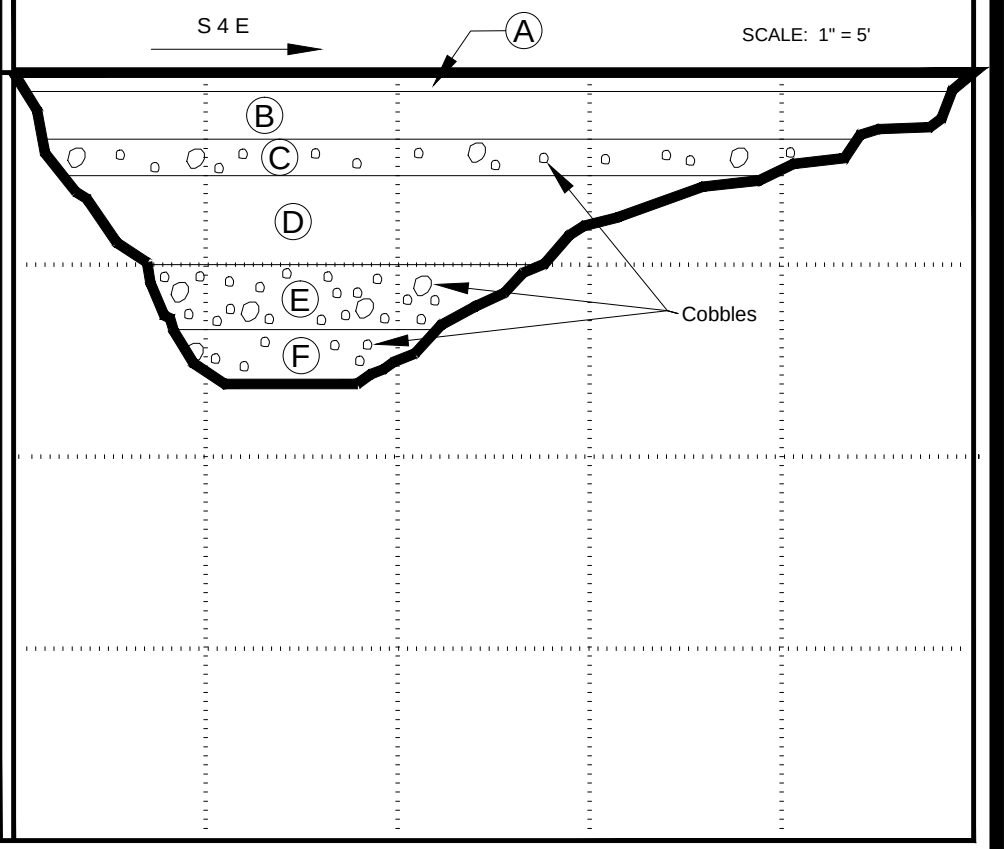
JOB NO.: 18G145-2
PROJECT: Proposed Warehouse
LOCATION: Irwindale, CA
DATE: 5-2-2018

EQUIPMENT USED: Backhoe
LOGGED BY: Scott McCann
ORIENTATION: S 4 E
ELEVATION:

WATER DEPTH: Dry
SEEPAGE DEPTH: Dry
READINGS TAKEN: At Completion

DEPTH	SAMPLE	DRY DENSITY (PCF)	MOISTURE (%)	EARTH MATERIALS DESCRIPTION
	b		2	A: AGGREGATE BASE (AB): 5 inches thick (Cement Treated) B: FILL: Light Brown Silty fine to medium Sand, little to some coarse Sand, little fine Gravel, dense - damp C: ALLUVIUM: Light Gray fine to coarse Sandy Gravel, occaional Cobbles, very dense - dry
	b		1	D: ALLUVIUM: Light Gray fine to medium Sand, little coarse Sand, trace to little fine to coarse Gravel, loose to medium dense - dry to damp
5				E: ALLUVIUM: Light Gray fine to coarse Sandy Gravel, extensive Cobbles, very dense - dry
	b		2	F: ALLUVIUM: Light Gray Gravelly fine to coarse Sand, occasional Cobbles, dense - dry to damp
				Trench Terminated @ 8 feet
10				
15				

GRAPHIC REPRESENTATION



KEY TO SAMPLE TYPES:
B - BULK SAMPLE (DISTURBED)
R - RING SAMPLE 2-1/2" DIAMETER (RELATIVELY UNDISTURBED)

TRENCH LOG

PLATE B-2

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	18G145-2
Engineer	Scott McCann

Infiltration Test No: I-1

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	9:57 AM	5	50	4600	400	14500	75.65	79.49	29.79	31.30
	Final	10:02 AM	**5**	4650		14900					
2	Initial	10:05 AM	5	150	4475	200	14150	73.60	77.57	28.98	30.54
	Final	10:10 AM	**13**	4625		14350					
3	Initial	10:14 AM	5	350	4375	200	13850	71.95	75.93	28.33	29.89
	Final	10:19 AM	**22**	4725		14050					
4	Initial	10:24 AM	5	250	4250	200	13550	69.90	74.28	27.52	29.25
	Final	10:29 AM	**32**	4500		13750					
5	Initial	10:32 AM	5	100	4050	100	13350	66.61	73.19	26.22	28.81
	Final	10:37 AM	**40**	4150		13450					
6	Initial	10:40 AM	5	100	3850	50	13050	63.32	71.54	24.93	28.17
	Final	10:45 AM	**48**	3950		13100					
7	Initial	10:48 AM	5	50	3750	450	12900	61.67	70.72	24.28	27.84
	Final	10:53 AM	**56**	3800		13350					
8	Initial	10:56 AM	5	350	3500	600	12750	57.56	69.90	22.66	27.52
	Final	11:01 AM	**64**	3850		13350					
9	Initial	11:04 AM	5	250	3450	250	12600	56.74	69.08	22.34	27.20
	Final	11:09 AM	**72**	3700		12850					
10	Initial	11:12 AM	5	50	3450	200	12500	56.74	68.53	22.34	26.98
	Final	11:17 AM	**80**	3500		12700					
11	Initial	11:20 AM	5	200	3400	300	12250	55.92	67.16	22.02	26.44
	Final	11:25 AM	**88**	3600		12550					
12	Initial	11:28 AM	5	100	3375	350	12150	55.51	66.61	21.85	26.22
	Final	11:33 AM	**96**	3475		12500					
13	Initial	11:36 AM	5	150	3350	400	12000	55.10	65.79	21.69	25.90
	Final	11:41 AM	**104**	3500		12400					
14	Initial	11:44 AM	5	200	3250	700	11950	53.45	65.51	21.04	25.79
	Final	11:49 AM	**112**	3450		12650					
15	Initial	11:52 AM	5	100	3250	50	11850	53.45	64.96	21.04	25.58
	Final	11:57 AM	**120**	3350		11900					

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	18G145-2
Engineer	Scott McCann

Infiltration Test No: I-1

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
16	Initial	12:00 PM	5	50	3200	150	11850	52.63	64.96	20.72	25.58
	Final	12:05 PM	**125**	3250		12000					
17	Initial	12:08 PM	5	200	3150	100	11600	51.81	63.59	20.40	25.04
	Final	12:13 PM	**133**	3350		11700					
18	Initial	12:16 PM	5	100	3250	250	11550	53.45	63.32	21.04	24.93
	Final	12:21 PM	**141**	3350		11800					
19	Initial	12:24 PM	5	250	3200	200	11500	52.63	63.05	20.72	24.82
	Final	12:29 PM	**149**	3450		11700					
20	Initial	12:32 PM	5	50	3200	100	11500	52.63	63.05	20.72	24.82
	Final	12:37 PM	**157**	3250		11600					
21	Initial	12:40 PM	5	100	3150	350	11450	51.81	62.77	20.40	24.71
	Final	12:45 PM	**165**	3250		11800					
22	Initial	12:48 PM	5	100	3100	200	11500	50.98	63.05	20.07	24.82
	Final	12:53 PM	**173**	3200		11700					
23	Initial	12:56 PM	5	200	3100	150	11450	50.98	62.77	20.07	24.71
	Final	1:01 PM	**181**	3300		11600					
24	Initial	1:04 PM	5	150	3125	150	11450	51.40	62.77	20.23	24.71
	Final	1:09 PM	**189**	3275		11600					
25	Initial	1:12 PM	5	100	3100	600	11450	50.98	62.77	20.07	24.71
	Final	1:17 PM	**197**	3200		12050					
26	Initial	1:20 PM	5	100	3100	200	11400	50.98	62.50	20.07	24.61
	Final	1:25 PM	**205**	3200		11600					
27	Initial	1:28 PM	5	250	3100	100	11400	50.98	62.50	20.07	24.61
	Final	1:33 PM	**213**	3350		11500					
28	Initial	1:36 PM	5	200	3100	0	11500	50.98	63.05	20.07	24.82
	Final	1:41 PM	**221**	3300		11500					
29	Initial	1:44 PM	5	200	3125	800	11450	51.40	62.77	20.23	24.71
	Final	1:49 PM	**229**	3325		12250					
30	Initial	1:55 PM	5	50	3100	750	11400	50.98	62.50	20.07	24.61
	Final	2:00 PM	**240**	3150		12150					

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	18G145-2
Engineer	Scott McCann

Infiltration Test No: I-2

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
1	Initial	7:55 AM	5	550	4800	100	14600	78.94	80.04	31.08	31.51
	Final	8:00 AM	**5**	5350		14700					
2	Initial	8:05 AM	5	250	4700	50	14250	77.30	78.12	30.43	30.76
	Final	8:10 AM	**15**	4950		14300					
3	Initial	8:14 AM	5	200	4650	0	13950	76.48	76.48	30.11	30.11
	Final	8:19 AM	**24**	4850		13950					
4	Initial	8:24 AM	5	100	4550	100	13700	74.83	75.11	29.46	29.57
	Final	8:29 AM	**34**	4650		13800					
5	Initial	8:32 AM	5	0	4375	50	13350	71.95	73.19	28.33	28.81
	Final	8:37 AM	**42**	4375		13400					
6	Initial	8:40 AM	5	50	4200	200	12750	69.08	69.90	27.20	27.52
	Final	8:45 AM	**50**	4250		12950					
7	Initial	8:48 AM	5	350	4100	500	12450	67.43	68.25	26.55	26.87
	Final	8:53 AM	**58**	4450		12950					
8	Initial	8:56 AM	5	450	3975	450	12150	65.38	66.61	25.74	26.22
	Final	9:01 AM	**66**	4425		12600					
9	Initial	9:04 AM	5	500	3900	600	12050	64.14	66.06	25.25	26.01
	Final	9:09 AM	**74**	4400		12650					
10	Initial	9:12 AM	5	300	3850	200	11750	63.32	64.42	24.93	25.36
	Final	9:17 AM	**82**	4150		11950					
11	Initial	9:20 AM	5	250	3725	0	11550	61.26	63.32	24.12	24.93
	Final	9:25 AM	**90**	3975		11550					
12	Initial	9:28 AM	5	150	3650	100	11400	60.03	62.50	23.63	24.61
	Final	9:33 AM	**98**	3800		11500					
13	Initial	9:36 AM	5	100	3475	300	11200	57.15	61.40	22.50	24.17
	Final	9:41 AM	**106**	3575		11500					
14	Initial	9:44 AM	5	200	3450	500	11250	56.74	61.67	22.34	24.28
	Final	9:49 AM	**114**	3650		11750					
15	Initial	9:52 AM	5	250	3400	200	11200	55.92	61.40	22.02	24.17
	Final	9:57 AM	**122**	3650		11400					

INFILTRATION CALCULATIONS

Project Name	Proposed Warehouse
Project Location	Irwindale, CA
Project Number	18G145-2
Engineer	Scott McCann

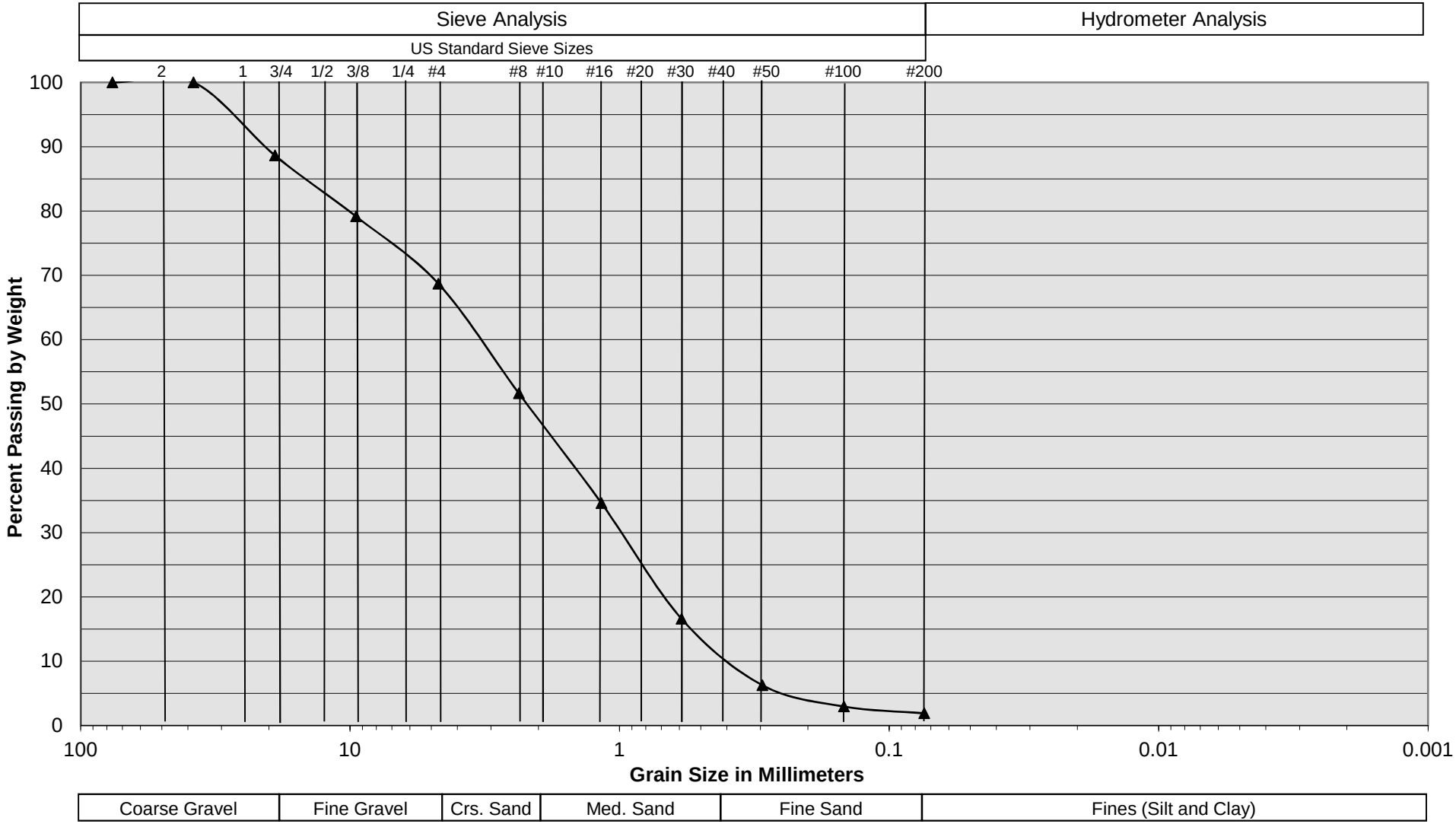
Infiltration Test No: I-2

Constants	Diameter (ft)	Area (ft^2)	Area (cm^2)
Inner	1	0.79	730
Anlr. Spac	2	2.36	2189

*Note: The infiltration rate was calculated based on current time interval

Test Interval		Time (hr)	Interval **Elapsed** (min)	Flow Readings: Inner Ring (ml)	Ring Flow (cm^3)	Annular Ring (ml)	Space Flow (cm^3)	Infiltration Rates: Inner Ring* (cm/hr)	Annular Space* (cm/hr)	Inner Ring* (in/hr)	Annular Space* (in/hr)
16	Initial	10:00 AM	5	100	3375	100	11150	55.51	61.13	21.85	24.07
	Final	10:05 AM	**127**	3475		11250					
17	Initial	10:08 AM	5	150	3300	300	11100	54.27	60.85	21.37	23.96
	Final	10:13 AM	**135**	3450		11400					
18	Initial	10:16 AM	5	50	3300	600	11000	54.27	60.30	21.37	23.74
	Final	10:21 AM	**143**	3350		11600					
19	Initial	10:24 AM	5	0	3350	500	10950	55.10	60.03	21.69	23.63
	Final	10:29 AM	**151**	3350		11450					
20	Initial	10:32 AM	5	50	3325	450	11050	54.68	60.58	21.53	23.85
	Final	10:37 AM	**159**	3375		11500					
21	Initial	10:40 AM	5	200	3325	300	10900	54.68	59.76	21.53	23.53
	Final	10:45 AM	**167**	3525		11200					
22	Initial	10:48 AM	5	150	3300	200	10950	54.27	60.03	21.37	23.63
	Final	10:53 AM	**175**	3450		11150					
23	Initial	10:56 AM	5	250	3300	200	10900	54.27	59.76	21.37	23.53
	Final	11:01 AM	**183**	3550		11100					
24	Initial	11:04 AM	5	100	3275	700	10850	53.86	59.48	21.21	23.42
	Final	11:09 AM	**191**	3375		11550					
25	Initial	11:12 AM	5	100	3225	400	10850	53.04	59.48	20.88	23.42
	Final	11:17 AM	**199**	3325		11250					
26	Initial	11:20 AM	5	50	3250	450	10850	53.45	59.48	21.04	23.42
	Final	11:25 AM	**207**	3300		11300					
27	Initial	11:28 AM	5	100	3250	300	10800	53.45	59.21	21.04	23.31
	Final	11:33 AM	**215**	3350		11100					
28	Initial	11:36 AM	5	200	3275	250	10750	53.86	58.93	21.21	23.20
	Final	11:41 AM	**223**	3475		11000					
29	Initial	11:44 AM	5	50	3250	0	10800	53.45	59.21	21.04	23.31
	Final	11:49 AM	**231**	3300		10800					
30	Initial	11:53 AM	5	150	3250	200	10800	53.45	59.21	21.04	23.31
	Final	11:58 AM	**240**	3400		11000					

Grain Size Distribution

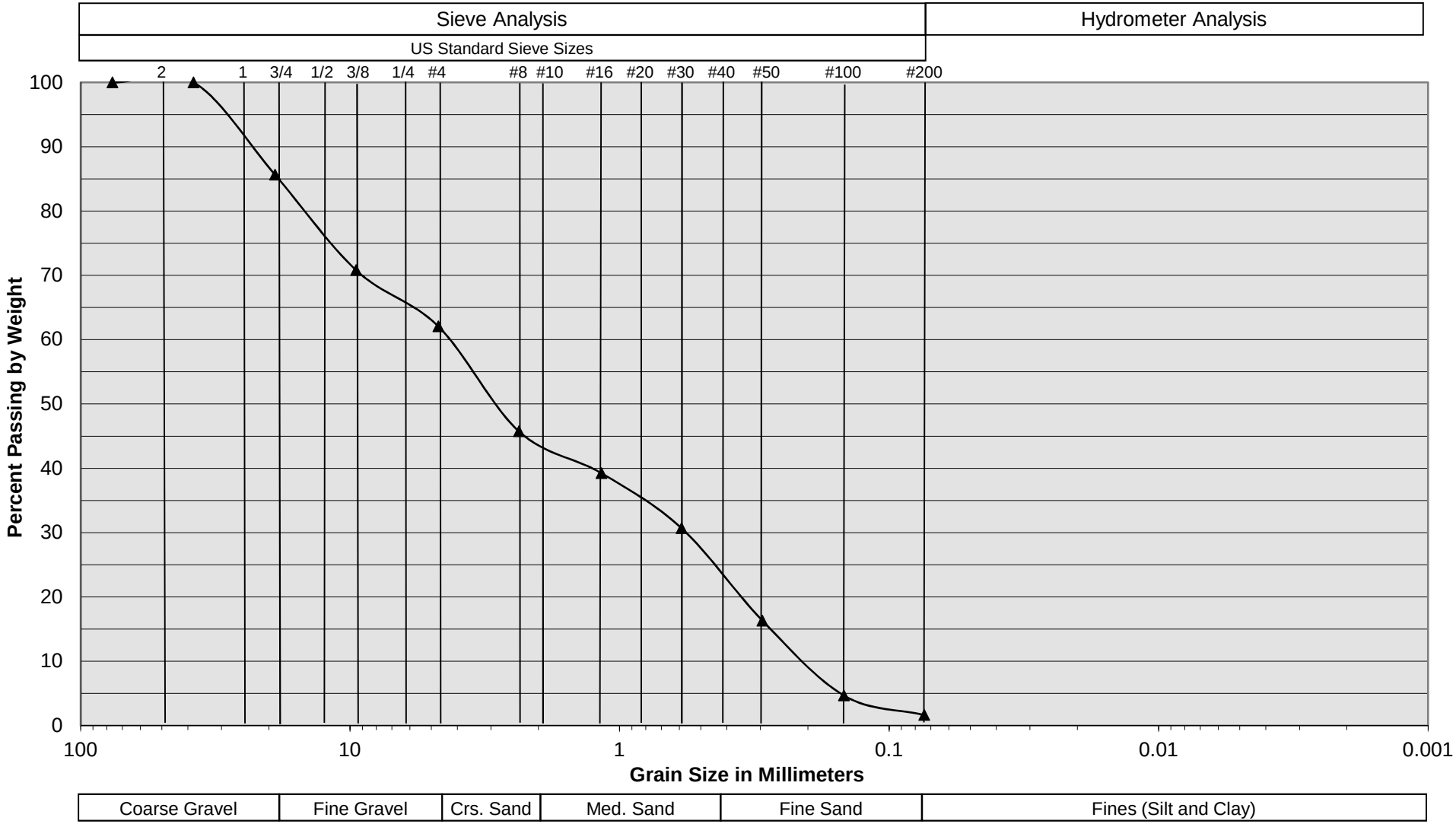


Sample Description	I-1 @ 8 feet
Soil Classification	Light Gray Brown Gravelly fine to coarse Sand

Proposed Warehouse
Irwindale, CA
Project No. 18G145-2
PLATE C-1

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

Grain Size Distribution



Sample Description	I-2 @ 8 feet
Soil Classification	Light Gray Gravelly fine to coarse Sand

Proposed Warehouse
Irwindale, CA
Project No. 18G145-2
PLATE C-2

SOUTHERN CALIFORNIA GEOTECHNICAL
A California Corporation

APPENDIX H

Preliminary Hydrological Calculations

Thienes Engineering, Inc.
CIVIL ENGINEERING LAND SURVEYING

PROPOSED SITE DRAINAGE MEMO

MACH 19, 2020
DUKE IRWINDALE INDUSTRIAL SITE
13131 LOS ANGELES STREET
IRWINDALE, CALIFORNIA

Luis Pimental, E.I.T.
Engineering Technician
Public Works/Engineering
City of Irwindale
5050 N. Irwindale Avenue
Irwindale, Ca 91706

The majority of the project site drains from north to south to Los Angeles Street under existing conditions. A smaller portion of the site appears to surface drain to River Grade Road located at the northerly portion of the project site. The existing condition 50-year peak flow rate to Los Angeles Street is approximately 43.5 cfs while the peak flow rate to River Grade Road is about 10.6 cfs.

Flow to Los Angeles Street is intercepted in existing catch basins. One catch basin is located adjacent to the project site and conveys runoff to the existing quarry located on the southerly side of Los Angeles Street. The other catch basin is located westerly of the project site and appears to an existing Los Angeles County Department of Public Works storm drain system.

The existing Los Angeles County Department of Public Works storm drain system (Project No. 445 Line “B”) is located at the southerly property line of the project site. This storm drain system conveys runoff westerly, ultimately discharging into the San Gabriel River. Correspondence with the County indicates that the project site is not table to this storm drain system. The County has indicated that a hydraulic analysis of the existing system can be performed and that additional flow can be added such that “the extra input will not buck the present condition H.G.L. by more than 0.2 feet”. There is no storm event indicated on the plans or calculations received from the County.

Thienes Engineering has established a hydraulic model for the entire existing storm drain system based on plans and peak flow rates provided by the County. A trial and error method was used to add various peak flow rates at one location to the County storm drain to determine the maximum peak flow rate that could be added such that the increase the H.G.L. no more than 0.20’. This amount is 6.5 cfs.

14349 Firestone Blvd., La Mirada, CA 90638 | Telephone: (714) 521-4811 | Fax: (714) 521-4173

The preliminary proposed condition 50-year peak flow rate for the site is approximately 77.5 cfs. This is a direct addition of individual subarea peak flow rates and does not include detention. To achieve only 6.5 cfs total discharge from the project site will required onsite detention. Truck yards at the northerly and westerly portion of the project site will be used for temporary storage. The easterly portion of the site is a vehicle parking area and does not have the ability to detain runoff on the surface. Therefore, additional storage volume is provided in the proposed underground storage system. The underground storage is intended to meet water quality volumes. However, this volume can be increased to accommodate some storage of peak flow rates.

Hydrographs were established for drainage areas tributary to the various detention areas. The hydraulic Toolbox program (accepted by Los Angeles County) was used to run “basins” to determine required volumes for storage. Preliminary analysis shows that between storage in the truck yards and additional underground storage, the discharge from the majority of the project site can be reduce to about 4.5 cfs. This leaves approximately 2.0 cfs for the parking areas adjacent to Los Angeles Street. Here, smaller individual storage areas will be necessary in the parking lots. Overall, a total discharge of no more than 6.5 cfs can be achieved for the project site.

It has been shown that the peak flow rate can be reduced to an amount acceptable to the County for a connection to the existing County storm drain system. As an alternative, this same reduced peak flow rate can be discharged to the existing City catch basin adjacent to the site. In either case, the overall 50-year peak flow rate can be reduced to approximately 15% (6.5 cfs/43.5 cfs) of the existing condition 50-year peak flow rate currently tributary to Los Angeles Street.

Reinhard Stenzel, R.C.E No. 56155
Director of Engineering
Thienes Enginering, Inc.
14349 Firestone Boulvard
La Mirada, Ca 90638

REGISTERED PROFESSIONAL ENGINEER
REINHARD STENZEL
R.C.E. NO. 56155
Exp. 12-31-20
CIVIL
STATE OF CALIFORNIA

14349 Firestone Blvd., La Mirada, CA 90638 | Telephone: (714) 521-4811 | Fax: (714) 521-4173

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

DUKE WAREHOUSE AT 13131 LOS ANGELES STREET
13131 LOS ANGELES STREET
IRWINDALE, CALIFORNIA

PREPARED FOR

DUKE REALTY 13131 LA STREET, LP
200 SPECTRUM CENTER DRIVE, SUITE 1600
IRVINE, CA 92168
PHONE: (949) 797-7000
FAX. (949) 797-7080

AUGUST 29, 2018
REVISED NOVEMBER 13, 2018
REVISED NOVEMBER 26, 2019

JOB NO. 3665

PREPARED BY

THIENES ENGINEERING
14349 FIRESTONE BLVD.
LA MIRADA, CALIFORNIA 90638
PHONE: (714) 521-4811
FAX: (714) 521-4173

PRELIMINARY HYDROLOGY CALCULATIONS

FOR

DUKE WAREHOUSE AT 13131 LOS ANGELES STREET

PREPARED BY RICKY HWA
UNDER THE SUPERVISION OF

REINHARD STENZEL, PE DATE:
R.C.E. 56155
EXP. 12/31/20

INTRODUCTION

A: PROJECT LOCATION

The project site is located at 13131 Los Angeles Street in the city of Irwindale, California. Please see following page for vicinity map.

B: STUDY PURPOSE

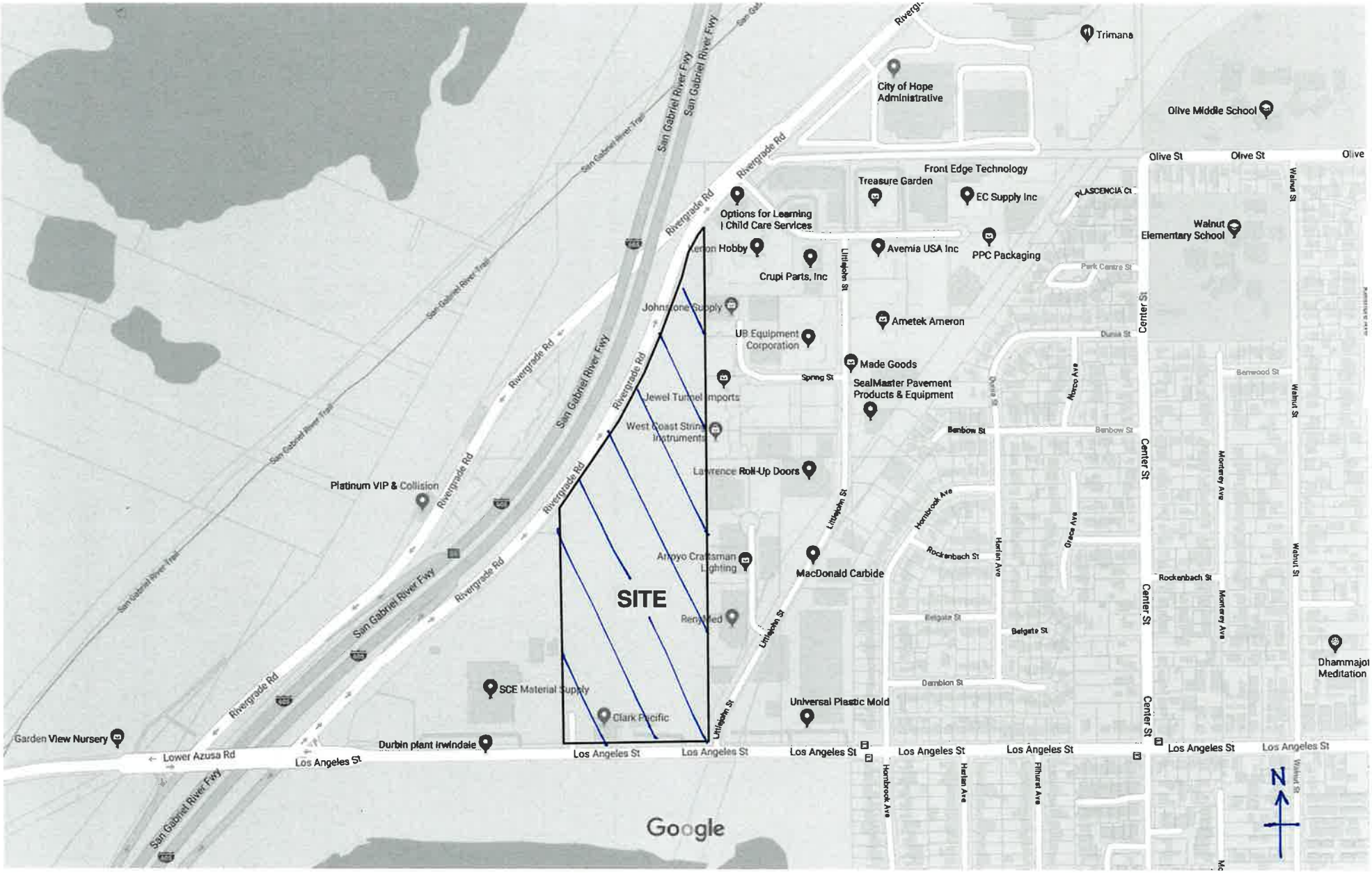
The purpose of this study is to determine the existing condition and proposed condition 25-year and 50-year peak flow rates from the project site, which drains to existing catch basins in Rivergrade Road and Los Angeles Street.

C: PROJECT STAFF:

Thienes Engineering staff involved in this study include:

Reinhard Stenzel
Ricky Hwa

Google Maps



VICINITY MAP

DISCUSSION

The project site encompasses approximately 24.90 acres. Proposed improvements consist of one commercial type building of 522,410 square feet. There will be truck yards on the north and west sides of the proposed building, a vehicle parking lot on the south side, and a drive aisle on the east side. There will be landscapes along the property lines and scattered throughout the site.

County Hydrology

Per Los Angeles County hydrology data, the project site is not tabled to the County maintained Project 445 – Line B, a reinforced concrete box system that traverses through the site near its southerly property line. However, the site is tributary to several City-maintained street catch basins in Rivergrade Road and Los Angeles Street.

Please see Appendix "A" for County hydrology, as-built storm drain plans, County storm drain index and other pertinent reference materials.

Existing Condition

The project site is currently developed with several warehouse type buildings, small office buildings, and paved parking lots.

The northerly portion of the site (Subarea 1A, 4.70 acres) surface drains south-westerly to Rivergrade Road. Runoff is then conveyed further south-westerly in Rivergrade Road to several City-maintained street catch basins approximately 500 feet from the site's westerly property line. The total existing condition 25-year and 50-year peak flow rates from this portion of the site are approximately 8.7 cfs and 10.6 cfs, respectively.

The south-easterly portion of the project site (Subarea 10B, 12.70 acres) surface drains southerly to a City-maintained catch basin in Los Angeles Street fronting the site. Runoff is then conveyed further south via a 36-inch storm drain to a detention basin within a quarry facility south of Los Angeles Street. The total existing condition 25-year and 50-year peak flow rates from this portion of the site are approximately 22.2 cfs (15.4 cfs from 8.90 acres with soil type 7 + 6.8 cfs from 3.80 acres with soil type 8) and 26.2 cfs (18.2 cfs from 8.90 acres with soil type 7 + 8.0 cfs from 3.80 acres with soil type 8), respectively.

The south-westerly portion of the project site (Subarea 20C, 7.50 acres) surface drains southerly to Los Angeles Street. Runoff is then conveyed westerly to a County-maintained street catch basin (approximately 600 feet from the site's westerly property line) in Los Angeles Street tributary to Project 445 – Line B. The total existing condition 25-year and 50-year peak flow rates from this portion of the site are approximately 14.6 cfs (8.3 cfs from 4.35 acres with soil type 7 + 6.3 cfs from 3.15 acres with soil type 8) and 17.3 cfs

(9.9 cfs from 4.35 acres with soil type 7 + 7.4 cfs from 3.15 acres with soil type 8), respectively.

See Appendix "B" for existing condition hydrology calculations and Appendix "D" for existing condition hydrology map.

Proposed Condition

The northerly entry driveway and adjacent frontage landscape (Subarea 1A, 0.50 acres) surface drain north-westerly to Rivergrade Road. Runoff is then conveyed south-westerly in Rivergrade Road to several existing City-maintained street catch basins. The total proposed condition 25-year and 50-year peak flow rates from this portion of the site are approximately 1.6 cfs and 1.8 cfs, respectively. This is less than the existing condition rates of 8.7 cfs (25-year) and 10.6 cfs (50-year) from the site tributary to the same catch basins.

Most of the project site's remaining areas are tributary to the existing City-maintained street catch basin in Los Angeles Street fronting the site, via the proposed onsite storm drain system (Subareas 10B-17B, 23.70 acres) and surface flow (Subarea 18B, 0.35 acres).

Specifically for the proposed onsite storm drain system, runoffs from the northeast quarter of the proposed building (Subarea 10A, 3.20 acres) and the northerly truck yard (Subareas 11B-12B, 4.30 acres) will be conveyed westerly via the proposed storm drain Line "B" to a catch basin in Subarea 13B, which accepts runoffs from the northwest corner of the proposed building and the north half of the westerly truck yard (Subarea 13B, 7.10 acres) via surface flow. Similarly, runoffs from the southwest corner of the proposed building and the south half of the westerly truck yard (Subarea 14B, 4.90 acres) will be conveyed northerly via the proposed storm drain Line "C" to the same catch basin in Subarea 13B. From there, runoffs will be conveyed southerly via the proposed storm drain Line "A" to the existing City-maintained catch basin in Los Angeles Street. Line "A" also accepts runoffs from the south-westerly parking lot (Subarea 15B, 0.40 acres), southerly parking lot (Subarea 16B, 0.65 acres), and the southeast corner of the proposed building (Subarea 17B, 3.15 acres).

The total proposed condition 25-year and 50-year peak flow rates from the project site (Subareas 10B-18B, 24.05 acres) tributary to the existing City-maintained drainage facilities in Los Angeles Street are approximately 61.9 cfs (25-year) and 74.5 cfs (50-year), respectively. This is more than the existing condition rates of 22.2 cfs (25-year) and 26.2 cfs (50-year) from the site tributary to the same existing drainage system. Detention in the site's westerly truck yard will be utilized to reduce proposed condition 50-year discharge to below existing condition 50-year runoff.

Lastly, the project site's south-westerly frontage driveway (Subarea 20C, 0.35 acres) will surface flow southerly to Los Angeles Street, then westerly to the existing County-maintained street catch basin. The proposed condition 25-year and 50-year peak flow rates from this portion of the site are approximately 1.1 cfs (25-year) and 1.2 cfs (50-year),

respectively. This is less than the existing condition rates of 14.6 cfs (25-year) and 17.3 cfs (50-year) from the site tributary to the same County-maintained catch basin.

See Appendix "B" for proposed condition hydrology calculations and Appendix "D" for proposed condition hydrology map.

Detention

As mentioned above, detention in the project site's westerly truck yard will be utilized to reduce proposed condition 50-year runoff (74.5 cfs from Subareas 10B-18B) tributary to the existing City-maintained drainage system in Los Angeles Street to below existing condition 50-year runoff (26.2 cfs).

Per hydrograph calculations in Appendix "C", approximately 32,513 cubic feet of proposed condition runoff tributary to the westerly truck yard (Subareas 10B-14B) can be temporarily detained at a depth of 1.98 ft (350.49 water surface elevation – 348.51 catch basin top of grate) in the truck yard, with the remaining 12.4 cfs discharging via the proposed onsite storm drain Line "A". With detention, the proposed condition 50-year discharge from the project site to the existing City-maintained drainage system in Los Angeles Street will be 26.1 cfs (12.4 cfs from Subareas 10B-14B + 1.4 cfs from undetained Subarea 15B + 2.3 cfs from undetained Subarea 16B + 8.8 cfs from undetained Subarea 17B + 1.2 cfs from undetained Subarea 18B). This is less than the existing 50-year discharge (26.2 cfs). Therefore, proposed site improvements will not impose any negative impacts on existing drainage facilities in Los Angeles Street.

The proposed onsite storm drains will be sized during the project site's final design phase to restrict outflow to the desirable discharge rates.

See Appendix "C" for detention calculations.

Methodology

Hydrology calculations and hydrographs were computed using Los Angeles County's HydroCalc spreadsheet. The soil type is "7" for the southerly portion of the site and "8" for the northerly portion of the site. To be conservative, for proposed condition Subareas 10B, 13B and 14B covered by both soil types, soil type "8" was used for the entire subareas, thus resulting in higher 50-year runoffs. The rainfall zone is 6.6 inches per Los Angeles County Hydrology Manual. See Appendix "A" for County hydrology reference materials.

APPENDIX	DESCRIPTION
A	REFERENCE MATERIALS
B	HYDROLOGY CALCULATIONS
C	DETENTION ANALYSIS
D	HYDROLOGY MAP

APPENDIX A

REFERENCE MATERIALS

016 SOIL CLASSIFICATION AREA

7.2 INCHES OF RAINFALL

DPA - 6 DEBRIS POTENTIAL AREA

N W E S

1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

BALDWIN PARK
50-YEAR 24-HOUR ISOHYET

1-H1.21

LOS ANGELES COUNTY PUBLIC WORKS Public Service That Works

Office Use Only
☐ Sent Initials: _____
☐ Fax ☒ Email ☐ Other: _____
Date: _____ Time: _____

LOS ANGELES COUNTY
DEPARTMENT OF PUBLIC WORKS
DESIGN DIVISION – HYDRAULIC ANALYSIS UNIT

INFORMATION REQUEST SUMMARY

INFORMATION REQUESTED BY

*Requester's Name: Angie Maldonado
Company: Thienes Engineering, Inc
*Phone Number: 714-521-4811 Fax Number: 714-521-4173
*Email: Angie@ThienesEng.com

Method of Contact: ☐ Walk-in ☐ Phone ☐ Fax ☒ Email ☐ Prelim. Mtg. Date: 4/20/18

Intended Use: Research

Proposed Project Type: Industrial Acreage Involved:

*Will information be used in any litigation? ☐ YES ☒ NO
Case Info. Name: _____ No: _____ Location: _____

COUNTY OF LOS ANGELES
DEPARTMENT OF PUBLIC WORKS
DESIGN DIVISION
Hydraulic Analysis Unit
OFFICIAL RECORD DOCUMENT
Issued By: Ambrose
Date: 05/23/2018
Public Service That Works

INFORMATION REQUESTED (Attach Assessor Map)

LACFCD Facility: Name: _____
Unit: _____ Line: _____ Station: _____
City: Irwindale
*Street/Cross-street: NWC Los Angeles St & Littlejohn St
*Thomas Guide: Page: 597 Grid: J4 ☒ Site Map/Plans Submitted
Info. Requested:
- Hydrology Map
- Allowable 'Q'
- Hydraulic calcs

***Required Information. See Page 2 of 2 for Instructions.**

BELOW SECTION TO BE COMPLETED BY THE HYDRAULIC ANALYSIS UNIT

INFORMATION PROVIDED: *Project 407 hydrology, Project 445 Line B hydraulic calculation. Project 407 and 445 as-built drawings.*

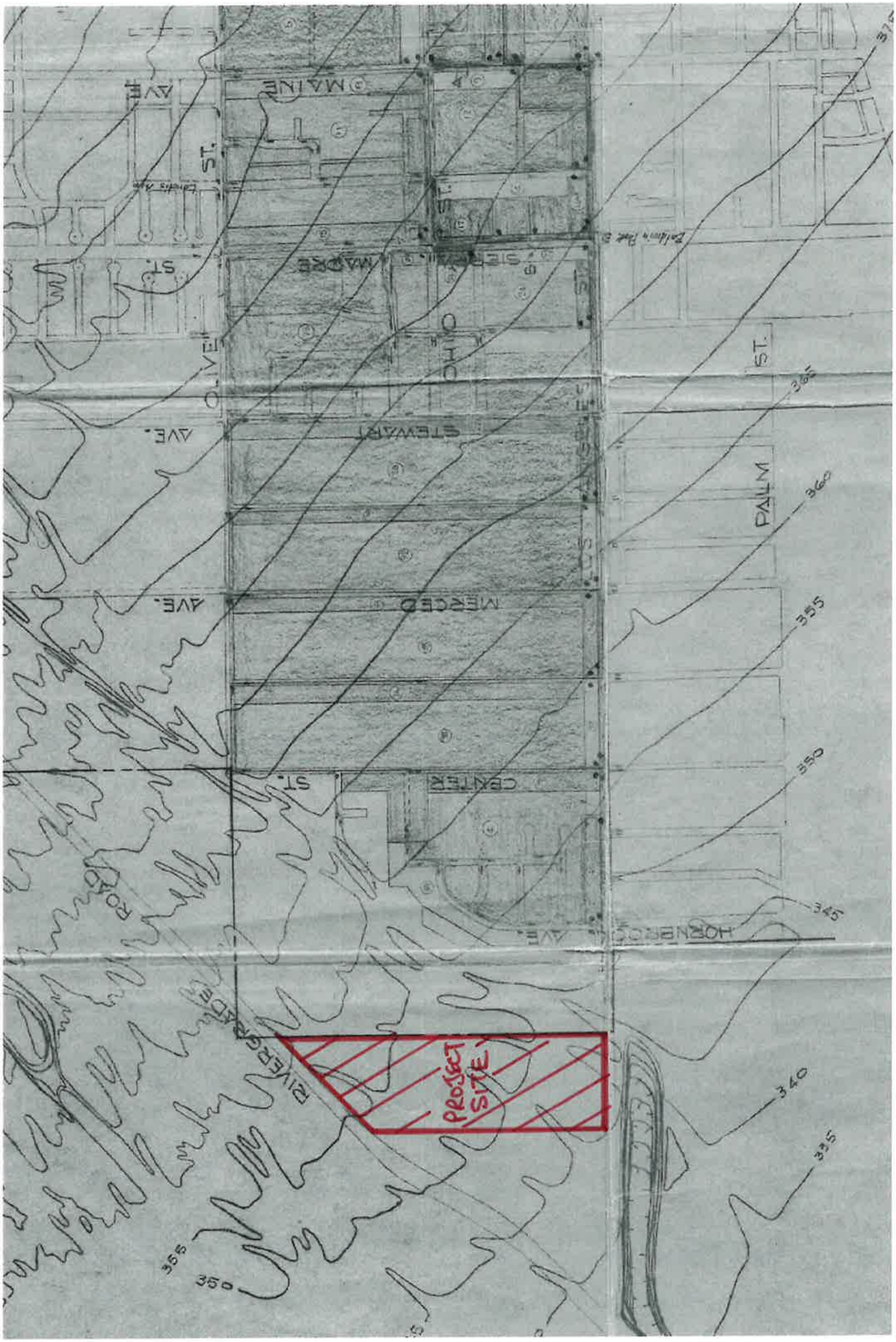
REFERENCES SEARCHED: *Projects 407 and 445 Line B.*

COMMENTS, ETC: *Allowable q per acre = 0*
Our records show that your area of interest is not tabled to Project 445 Line B. Thus, to qualify to apply for connection permit for this area, you need to do the following hydraulic impact analysis on Project 445 line B: Run a present condition WSPS on this drainage system, based the data provided in the information stated above. Run another post development condition WSPG, with the data supplied and extra input from your area of interest. Show that this extra input will not buck the present condition HGL by >0.2ft. Submit your analysis with your application, to our Land Development Division.

INFORMATION PROVIDED BY: *Ambrose C Ajaelo PE* Date: *05/23/2018*

INFORMATION REVIEWED BY: Date:

Print Save a Copy


MAINE AVE
ST.
MADRE
SIERRA
OLIVE
OHIO
STEWART
AVE.
MERCED
AVE.
CENTER
ST.
PALM
ST.
HORNBROOK AVE.
RIVERGRADE ROAD
PROJECT SITE
365
360
355
350
345
340
335
355
350

LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

Sht 1 of 1

Hydraulic Calculation Sheet

PROJECT # 445 - L[illegible] "B"

CALCULATED BY HLH

DATE 8/3/82

STA.	ELEV. INV	D	ELEV W.S.	SECTION	A	~~W.P.~~ k	~~R~~ V	Q	$\frac{v^2}{2g}$	E.G.	S_f	Av. S_f	L	h_f	h_b	h_j	h_t	E.G.
~~0+00~~	~~325.89~~	~~9.0'~~	~~335.88~~	R.C.B. ~~7'-6"x9'-0"~~	~~66.94~~	~~12699~~	~~7.8~~	525	.96	~~[illegible]~~	~~[illegible]~~	—						
~~0+10~~												~~.0017~~	~~10~~	~~.02~~				
0+00	325.88	10'	335.88	Box 7'-6"x[illegible]	34.4	17205	6.2		0.6	[illegible]	[illegible]	—	—					
0+10			335.61	7'-6"x9'-0"	66.94	12699	7.8		.96	336.57	.0017	.0013	10	.01			.05	
6+00			336.83							337.77		.0017	[illegible]	1.00	.22			
"			336.88							337.84			—	—	—	—	M.H. .05	
9+00			337.39							338.35			300	.51				
9+30			337.44							338.40			30	.05				
9+50			337.47							338.43			20	.03	—	—		
"			337.50	9'-9"x7'-0"	67.59	12743	7.8		.94	338.44	.0017		—	—	—	—	.01	
10+90			337.74							338.68			140	.24				
11+10			337.76	7'-6"x9'-0"	66.94	12699			.96	338.72			20	.03			.01	
16+80			339.07							340.03			570	.97	.34			
16+90			338.89	7'-1"x8'-6"	59.45	11330	[illegible]		1.21	340.10	[illegible]	.0019	10	.02			.05	
18+60			339.30							340.51		[illegible]	170	.37	.04			
26+60			341.06							342.27			[illegible]	1.76				
26+90			341.13							342.34			30	.07				
27+70			341.56	8'-3"x4'-0"	32.44	4669	3.1		1.02	342.58	.033	[illegible]	[illegible]	.22			.02	
31+50			342.81							343.83		.0033	380	1.25				
32+30			342.88	7'-1"x8'-6"	59.45	11330	8.84		1.21	344.09	.0022	.0028	80	.22			.04	
36+70			344.44							345.62		.0022	440	.97	.56			
36+80			343.89	90" RCP	44.18	7814	11.9		2.19	346.08	.0045	.0033	10	.03			.20	

DB-2

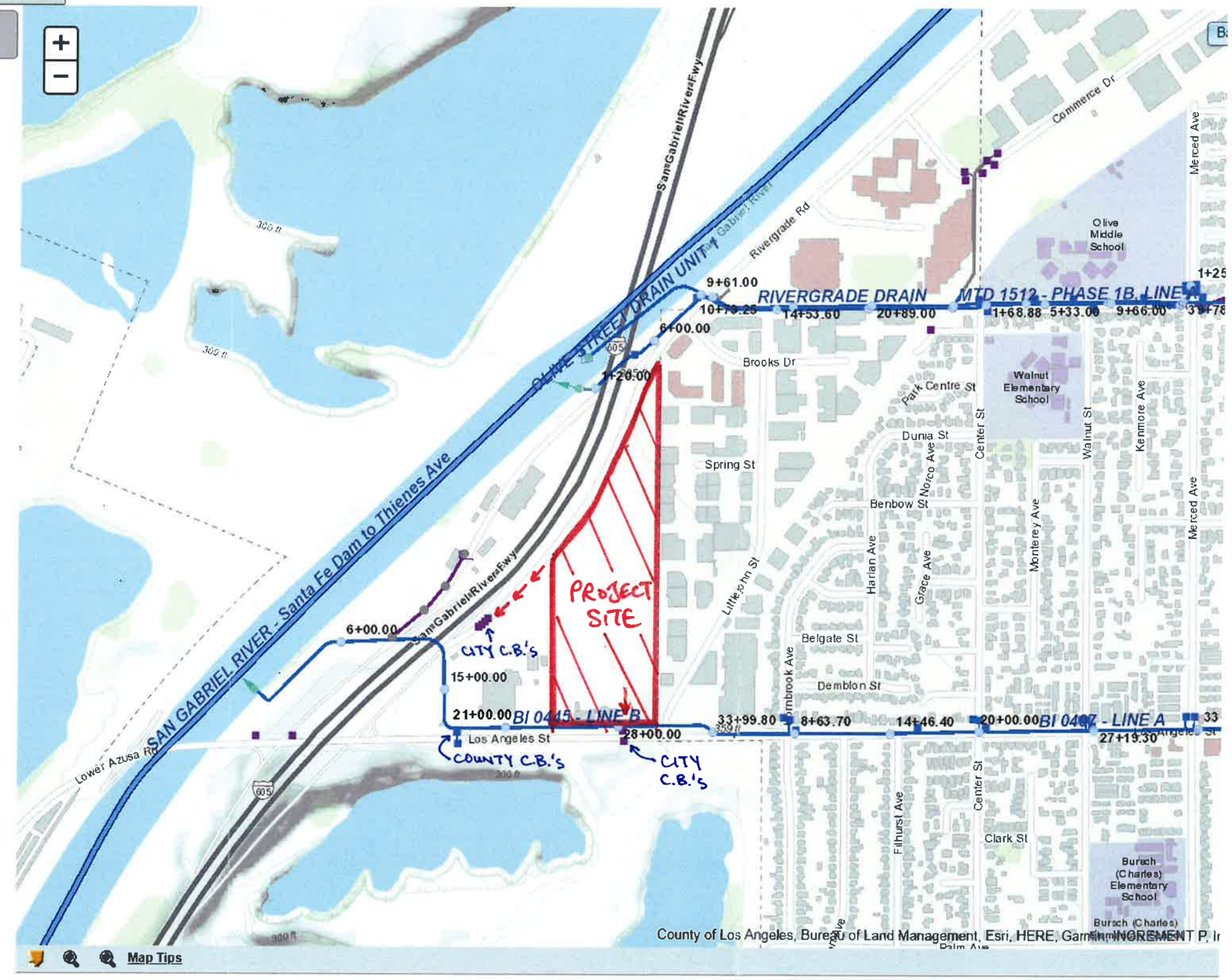
Department of Public Works
dpw.lacounty.gov

search our site..

Los Angeles County Storm Drain System | File Geodatabase Download | MS4 Outfalls Download

Search | Layers | Info

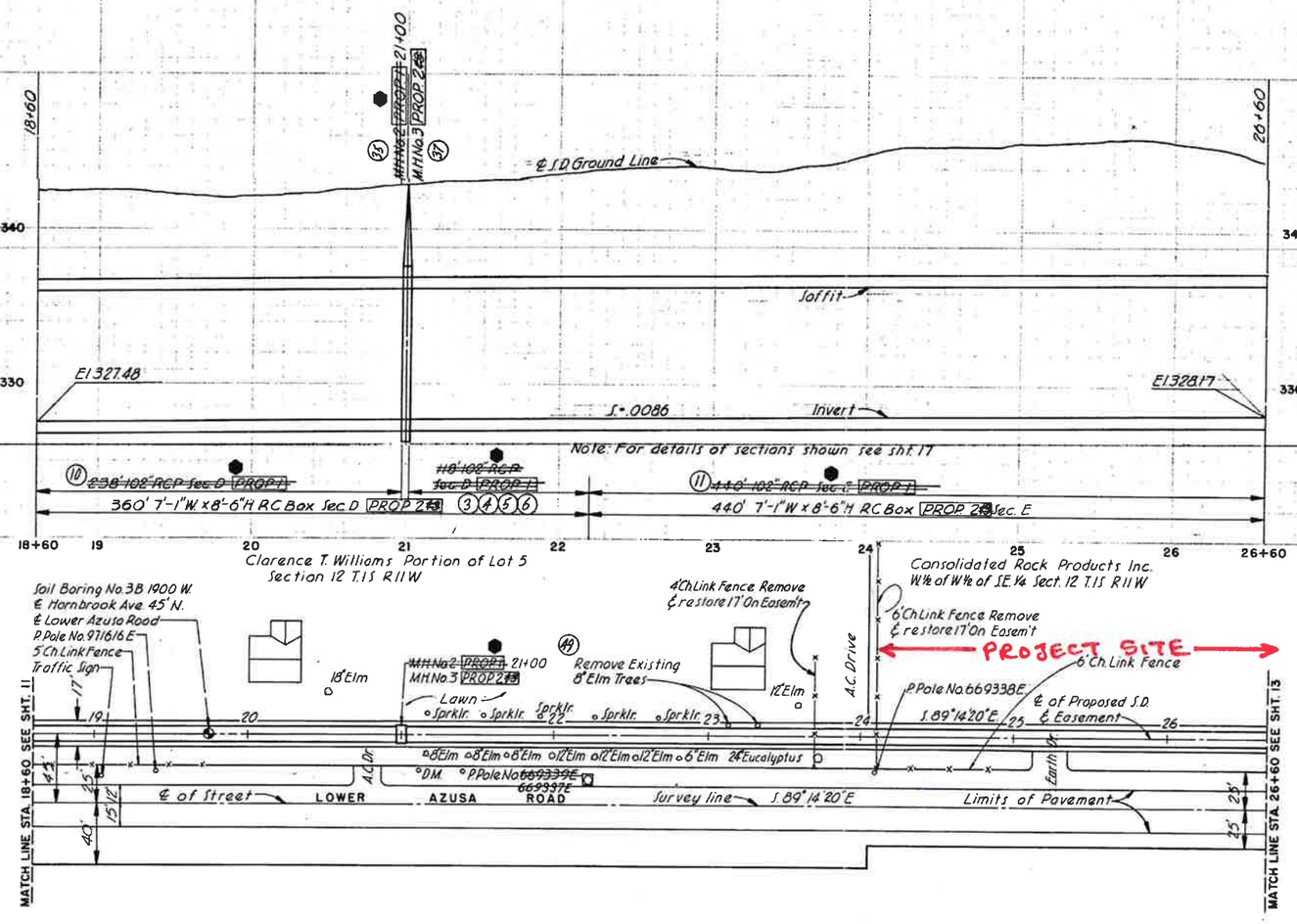
- Drains
  - Maintained by LACFCD
  - Maintained by City
  - Maintained by Road
  - Maintained by Metro/Parks & Recreation
  - Maintained by Private/Permittee/Others
  - Maintenance Unknown
- Channels
  - Maintained by LACFCD
  - Maintained by City
  - Maintenance Unknown
  - Maintained by Army Corp
- Catch Basins
  - Maintained by LACFCD
  - Maintained by City
  - Maintained by Road
  - Maintenance Unknown
- Maintenance Holes
  - Maintained by LACFCD
  - Maintained by City
  - Maintenance Unknown
- Laterals
  - Maintained by LACFCD
  - Maintained by City
  - Maintained by Road
  - Maintained by Metro/Parks & Recreation
  - Maintained by Private/Permittee/Others
  - Maintenance Unknown
- MS4 Outfalls
- MS4 Outfalls (CUA)
- Debris Basins
  - Maintained by LACFCD
  - Maintained by City
  - Maintenance Unknown
- Inlets/Outlets
  - Inlets
  - Outlets
- Low Flow Diversion
  - Maintained by LACFCD
  - Maintained by City
- Flood Right of Way Maps
- Flood Maintenance Districts Boundary
- Embankment
- Pseudoline

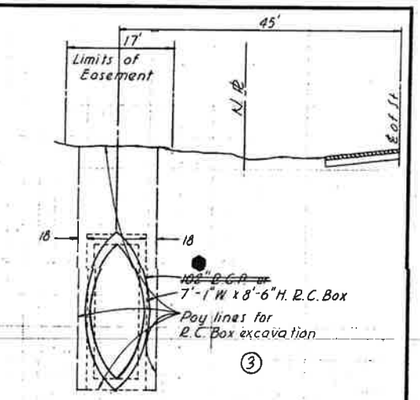


Map Tips

PROFILE

HORIZ. SCALE: 1" = 40'
VERT. SCALE: 1" = 4'





STA. 20+00
CROSS SECTION
Horiz. Scale 1" = 10'-0"
Vert. Scale 1" = 4'-0"

PLAN

SCALE: 1" = 40'

25 0 50 100

REFERENCE

None

BENCH MARKS

S.D. 154
8+Spk. in N.E. corner concrete base
L.A. Dept. of Water & Power, Power tower No. 246 DI 700'± W. Centerline 126'± N.
Centerline Hornbrook Ave. Centerline Lower Azusa Road
Elev. 344.638

"PD028651"

1958 STORM DRAIN BOND ISSUE

CITY OF IRWINDALE
APPROVED May 20, 1961
CITY MANAGER

WILSEY, HAM & BLAIR
ENGINEERS
MAY 26 61
CHIEF ENGINEER

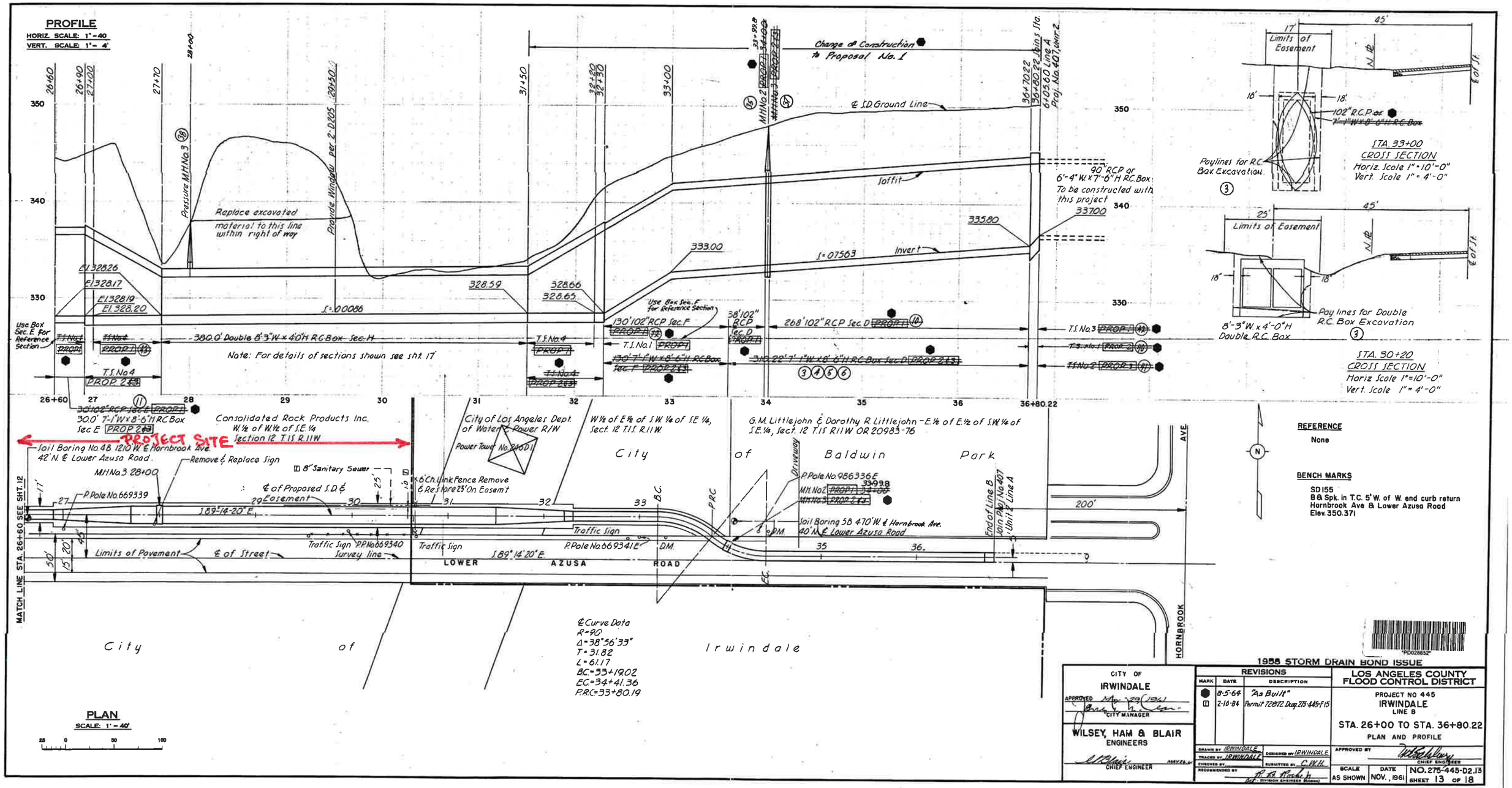
REVISIONS		
MARK	DATE	DESCRIPTION
○	4-25-62	Revised P.P. number
●	8-5-69	"As Built"

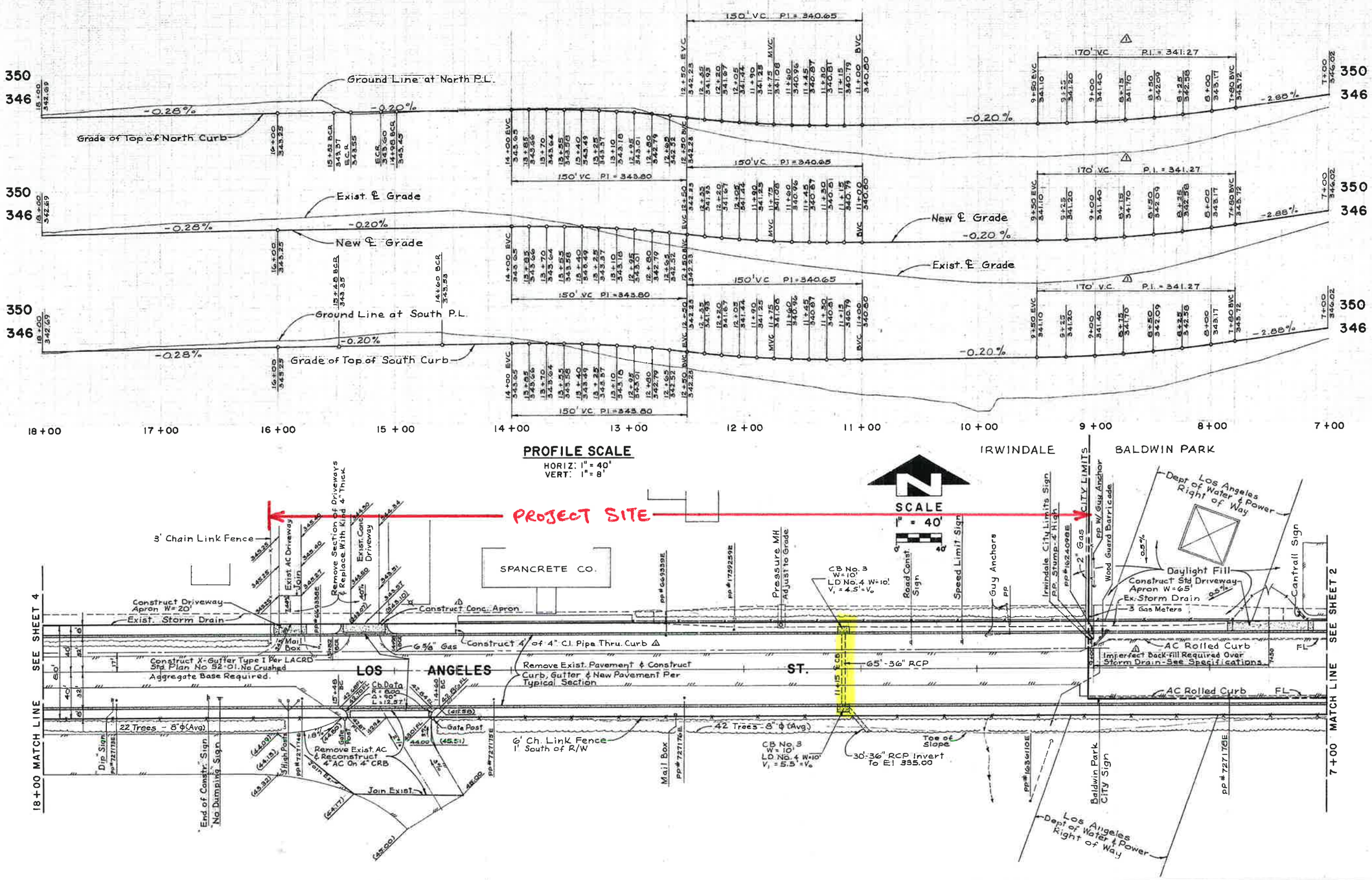
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT

PROJECT NO 445
IRWINDALE
LINE B

STA. 18+60 TO STA. 26+60
PLAN AND PROFILE

DRAWN BY IRWINDALE
TRACED BY IRWINDALE
DESIGNED BY IRWINDALE
CHECKED BY
SUBMITTED BY C.W.H.
RECOMMENDED BY
DIVISION ENGINEER (Designer)
APPROVED BY
CHIEF ENGINEER
SCALE AS SHOWN
DATE NOV., 1961
NO. 275-445-D2.12
SHEET 12 OF 18


PROFILE
HORIZ. SCALE: 1"=40
VERT. SCALE: 1"= 4'
Change of Construction to Proposal No. 1
℄ S.D. Ground Line
Soffit
Invert
Replace excavated material to this line within right of way
Pressure M.H. No. 3
Provide Window per 2-D205
90" RCP or 6'-4" W. x 7'-6" H R.C. Box To be constructed with this project
380.0' Double 8'-3" W x 4'-0" H R.C. Box Sec. H
Note: For details of sections shown see sht. 17
130' 102" RCP Sec. F
268' 102" RCP Sec. D
Use Box Sec. E for Reference Section
Use Box Sec. F for Reference Section
30.0' 7'-1" W x 8'-6" H R.C. Box Sec. E
PROJECT SITE
Consolidated Rock Products Inc. W. ½ of W. ½ of S.E. ¼ Section 12 T.1S. R.11W
City of Los Angeles Dept. of Water & Power R/W
Power Tower No. 246D1
W ½ of E ½ of S.W. ¼ of S.E. ¼, Sect. 12 T.1S. R.11W.
G.M. Littlejohn & Dorothy R. Littlejohn - E. ½ of E. ½ of S.W. ¼ of S.E. ¼, Sect. 12 T.1S. R.11W OR 20983-76
City of Baldwin Park
Soil Boring No. 4B 1210' W. ℄ Hornbrook Ave. 42' N. ℄ Lower Azusa Road
Remove & Replace Sign
8" Sanitary Sewer
℄ of Proposed S.D. & Easement
6' Ch. Link Fence Remove & Restore 25' On Easem't
P. Pole No. 669339
P. Pole No. 986336 E
Soil Boring 5B 470' W. ℄ Hornbrook Ave. 40' N. ℄ Lower Azusa Road
Limits of Pavement
℄ of Street
Traffic Sign
P. Pole No. 669340
Survey line
P. Pole No. 669341 E
LOWER AZUSA ROAD
End of Line B Join Proj. No. 407 Unit 2 Line A
City of Irwindale
℄ Curve Data
R=90
Δ=38°56'33"
T=31.82
L=61.17
B.C.=33+19.02
E.C.=34+41.36
P.R.C.=33+80.19
MATCH LINE STA. 26+60 SEE SHT. 12
HORNBROOK AVE
PLAN
SCALE: 1"=40'
STA. 33+00 CROSS SECTION
Horiz. Scale 1"=10'-0"
Vert. Scale 1"=4'-0"
Limits of Easement
Paylines for R.C. Box Excavation
102" R.C.P. or 7'-1" W x 8'-6" H R.C. Box
STA. 30+20 CROSS SECTION
Horiz Scale 1"=10'-0"
Vert. Scale 1"=4'-0"
8'-3" W. x 4'-0" H Double R.C. Box
Pay lines for Double R.C. Box Excavation
REFERENCE
None
BENCH MARKS
SD155
B & Spk. in T.C. 5' W. of W. end curb return Hornbrook Ave & Lower Azusa Road
Elev. 350.371
1958 STORM DRAIN BOND ISSUE
CITY OF IRWINDALE
APPROVED May 29 1961
CITY MANAGER
WILSEY, HAM & BLAIR ENGINEERS
CHIEF ENGINEER
REVISIONS
MARK DATE DESCRIPTION
8-5-64 "As Built"
2-16-84 Permit 72872 Dwg. 275-445-F15
LOS ANGELES COUNTY FLOOD CONTROL DISTRICT
PROJECT NO 445
IRWINDALE
LINE B
STA. 26+00 TO STA. 36+80.22
PLAN AND PROFILE
DRAWN BY IRWINDALE
TRACED BY IRWINDALE
DESIGNED BY IRWINDALE
CHECKED BY
SUBMITTED BY C.W.H.
RECOMMENDED BY
APPROVED BY
CHIEF ENGINEER
SCALE AS SHOWN
DATE NOV., 1961
NO. 275-445-D2.13
SHEET 13 OF 18



NO.	REVISION	INITIAL	DATE
2	Removed Traffic Island	KAH	6-11-71
1	Changed Vert. Curves on Profile, Back-fill over Storm Drain, Changed AC Approach To Conc., Added 4" C.I. Drain	KAH	5-26-71

SURVEY REFERENCE

HORIZONTAL CONTROL	F.B. 7 PG. 112	CLIENT	F.B. 1 PG. 113
VERTICAL CONTROL	F.B. 7 PG. 111	"	F.B. 1 PG. 117
TOPOGRAPHY	F.B. 7 PG. 113-122	"	F.B. 1 PG. 114-122
CROSS SECTIONS	F.B. 7 PG. 113-122	"	F.B. 1 PG. 114-122

DESIGN JWB DATE 4-8 1971
DRAWN KAH DATE 4-12 1971
CHECKED _____ DATE _____ 19

PREPARED IN THE OFFICE OF
LOCKMAN & ASSOCIATES, CIVIL ENGINEERS
BY [signature] R.E. 10290 DATE 4-14 19

CITY OF IRWINDALE
LOS ANGELES ST. IMPROVEMENTS
From HORNBROOK AVE. To 605 FREEWAY

JOB NO. 71-311
SHEET 3 OF 5

APPENDIX B

HYDROLOGY CALCULATIONS

EXISTING CONDITION
25-YEAR

Peak Flow Hydrologic Analysis

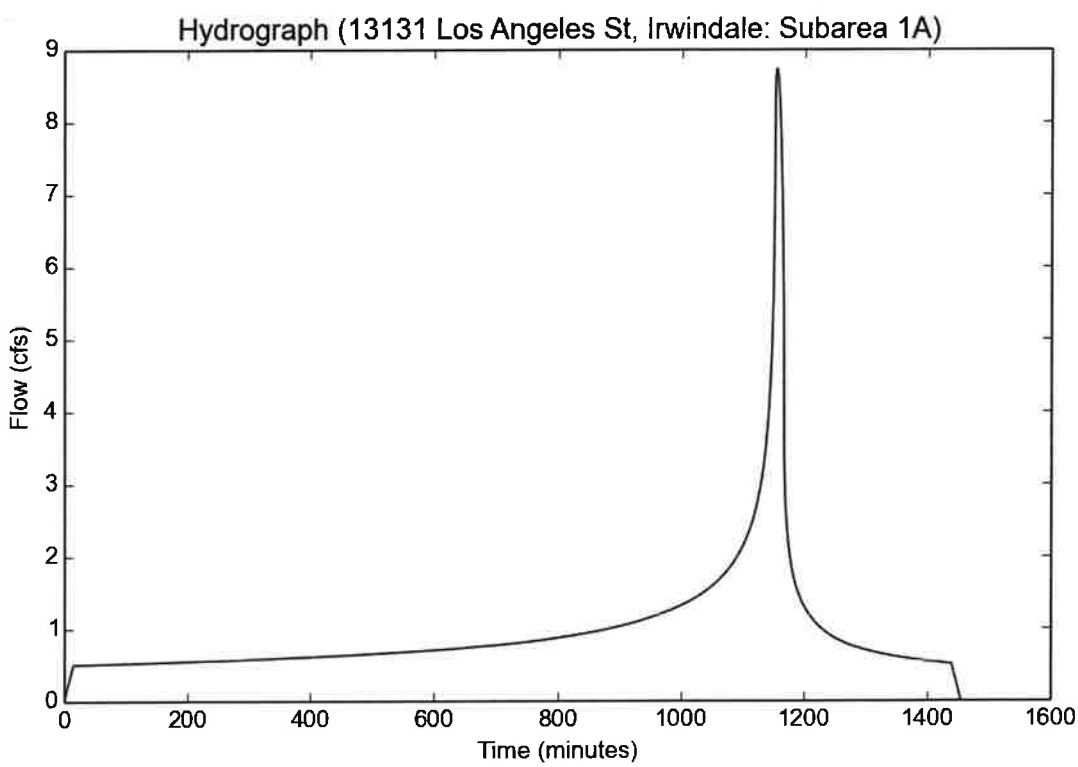
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing 25 Subarea 1A.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 1A
Area (ac)	4.7
Flow Path Length (ft)	1420.0
Flow Path Slope (vft/hft) = (363.50-353.70)/1420 =	0.007
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.063
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	8.7264
Burned Peak Flow Rate (cfs)	8.7264
24-Hr Clear Runoff Volume (ac-ft)	1.9145
24-Hr Clear Runoff Volume (cu-ft)	83394.7722



Peak Flow Hydrologic Analysis

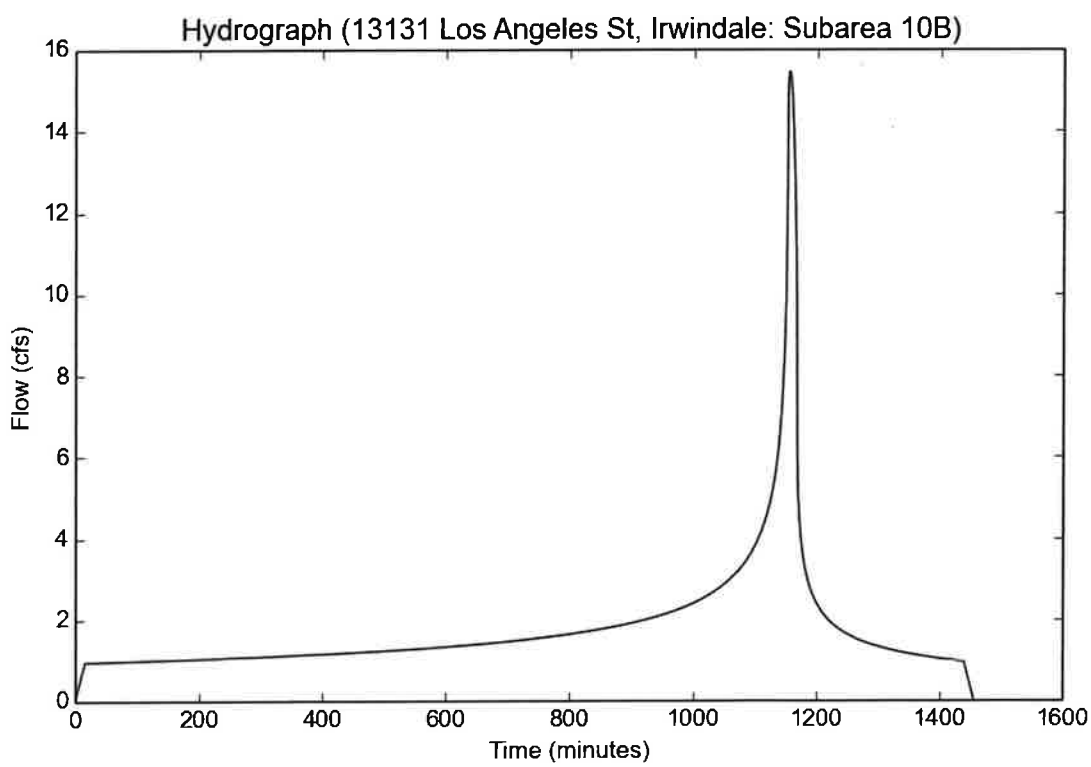
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing 25 Subarea 10B-7.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 10B
Area (ac)	8.9
Flow Path Length (ft)	1760.0
Flow Path Slope (vft/hft) = (360.20-343.60)/1760 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.0013
Undeveloped Runoff Coefficient (Cu)	0.5364
Developed Runoff Coefficient (Cd)	0.8673
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	15.4479
Burned Peak Flow Rate (cfs)	15.4479
24-Hr Clear Runoff Volume (ac-ft)	3.5453
24-Hr Clear Runoff Volume (cu-ft)	154433.5466



Peak Flow Hydrologic Analysis

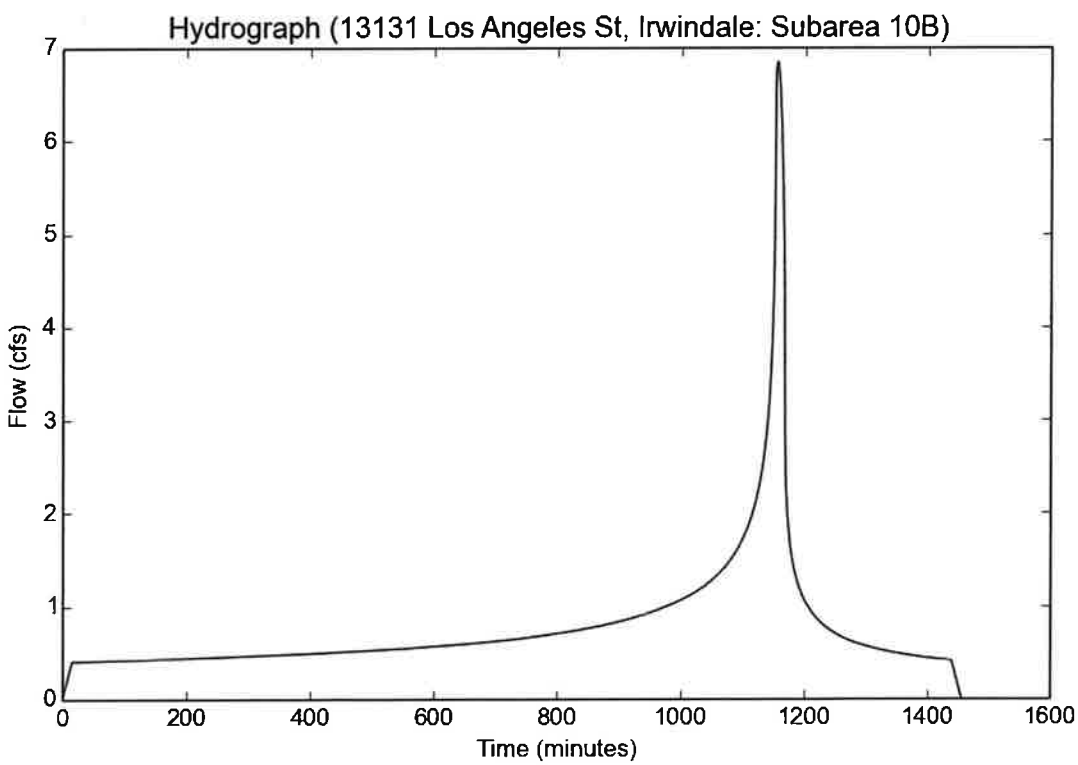
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing 25 Subarea 10B-8.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 10B
Area (ac)	3.8
Flow Path Length (ft)	1760.0
Flow Path Slope (vft/hft) =(360.20-343.60)/1760=	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.0013
Undeveloped Runoff Coefficient (Cu)	0.8989
Developed Runoff Coefficient (Cd)	0.8999
Time of Concentration (min)	16.0
Clear Peak Flow Rate (cfs)	6.8439
Burned Peak Flow Rate (cfs)	6.8439
24-Hr Clear Runoff Volume (ac-ft)	1.5479
24-Hr Clear Runoff Volume (cu-ft)	67425.54



Peak Flow Hydrologic Analysis

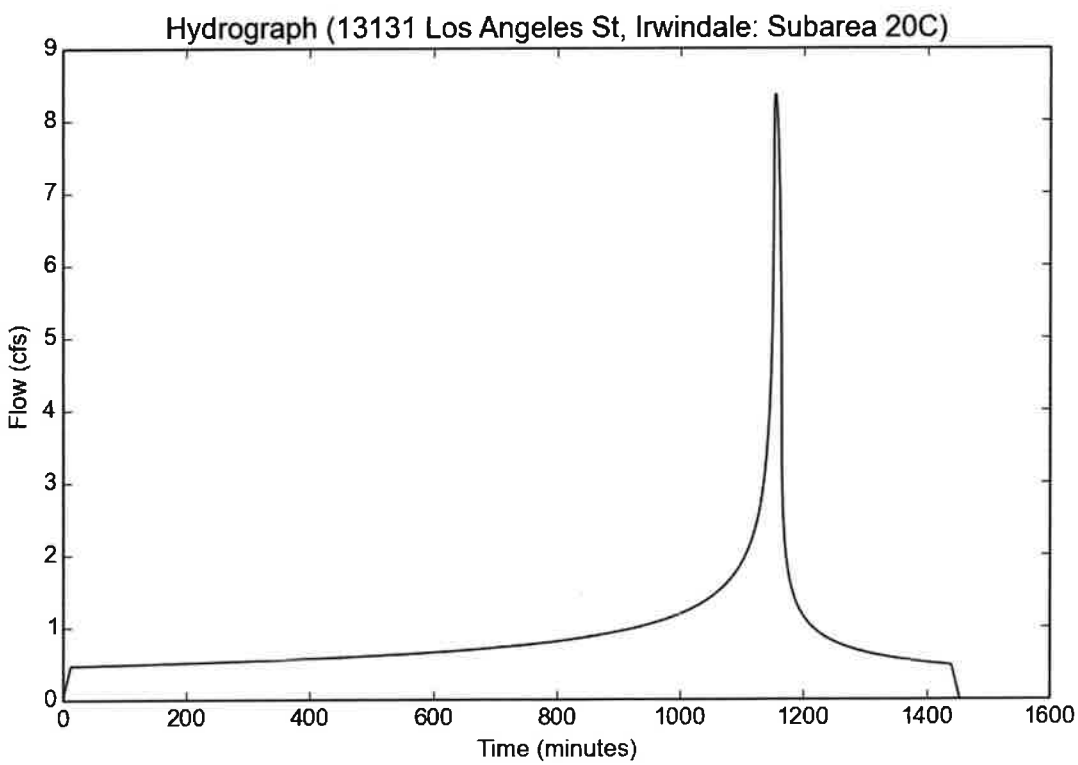
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing 25 Subarea 20C-7.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 20C
Area (ac)	4.35
Flow Path Length (ft)	1260.0
Flow Path Slope (vft/hft) = (357.70-345.60)/1260 =	0.01
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.2065
Undeveloped Runoff Coefficient (Cu)	0.5656
Developed Runoff Coefficient (Cd)	0.8699
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	8.3495
Burned Peak Flow Rate (cfs)	8.3495
24-Hr Clear Runoff Volume (ac-ft)	1.733
24-Hr Clear Runoff Volume (cu-ft)	75488.658



Peak Flow Hydrologic Analysis

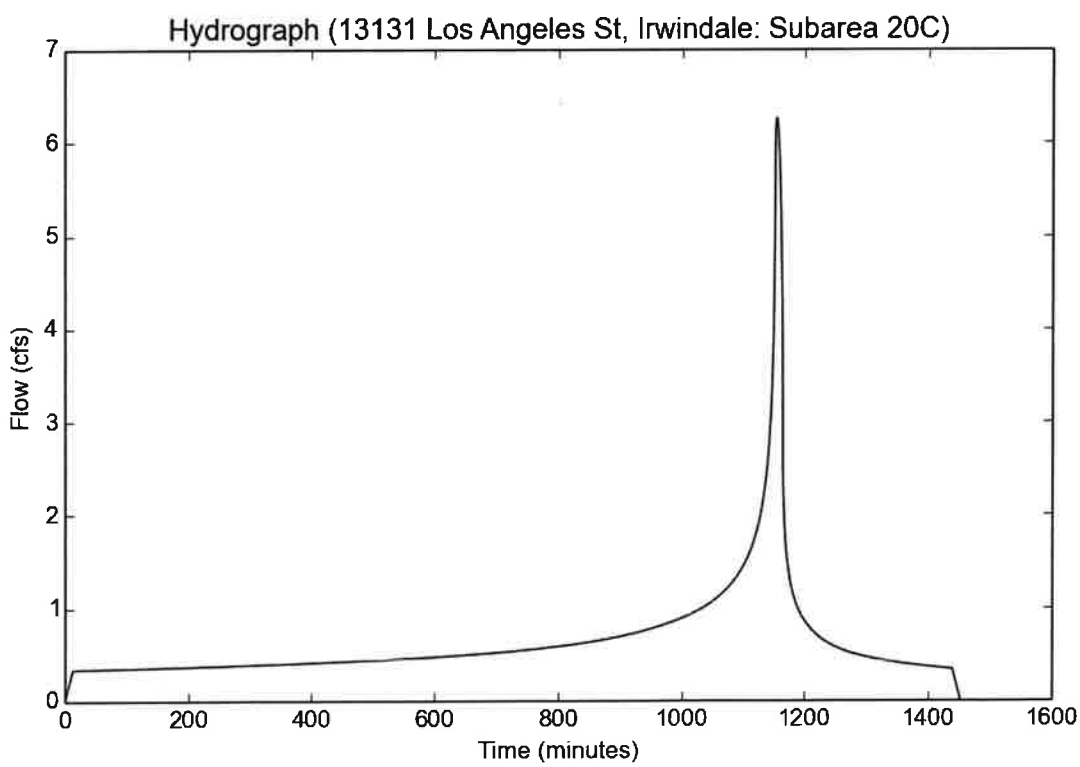
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing 25 Subarea 20C-8.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 20C
Area (ac)	3.15
Flow Path Length (ft)	1260.0
Flow Path Slope (vft/hft) = (357.70−345.60)/1260 =	0.01
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.2065
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	6.2554
Burned Peak Flow Rate (cfs)	6.2554
24-Hr Clear Runoff Volume (ac-ft)	1.2831
24-Hr Clear Runoff Volume (cu-ft)	55891.1245



EXISTING CONDITION
50-YEAR

Peak Flow Hydrologic Analysis

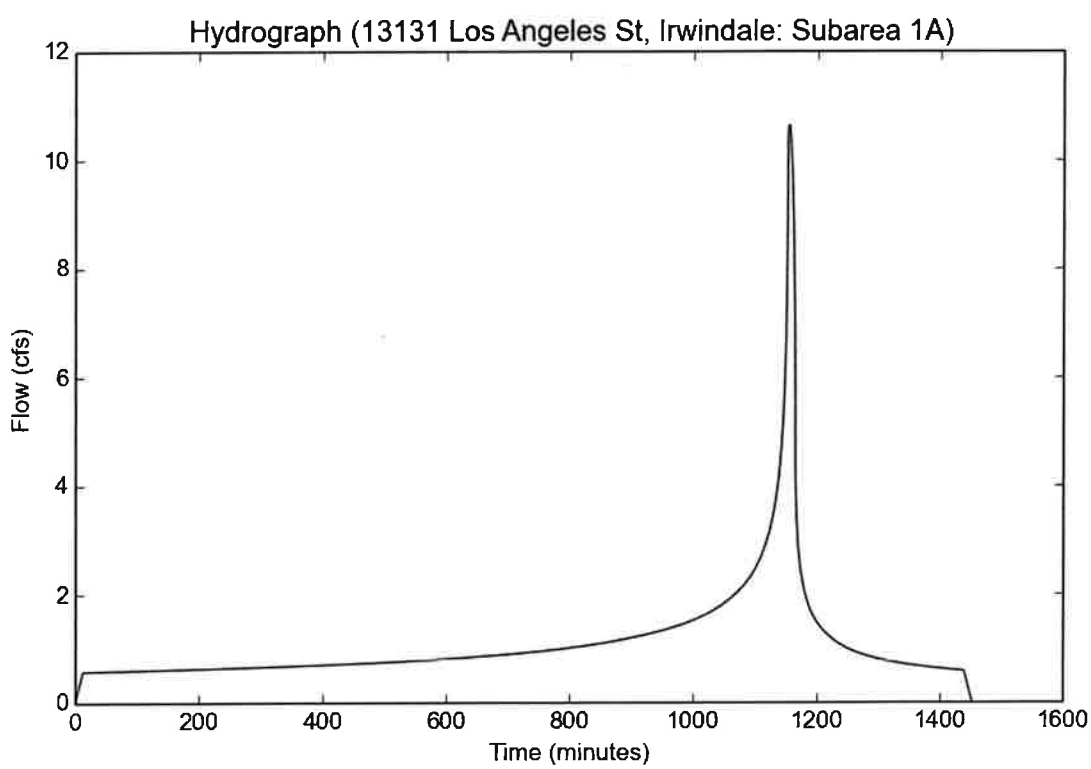
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing Subarea 1A.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 1A
Area (ac)	4.7
Flow Path Length (ft)	1420.0
Flow Path Slope (vft/hft) = (363.50−353.70)/1420 =	0.007
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	2.5131
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	13.0
Clear Peak Flow Rate (cfs)	10.6304
Burned Peak Flow Rate (cfs)	10.6304
24-Hr Clear Runoff Volume (ac-ft)	2.1895
24-Hr Clear Runoff Volume (cu-ft)	95373.0297



Peak Flow Hydrologic Analysis

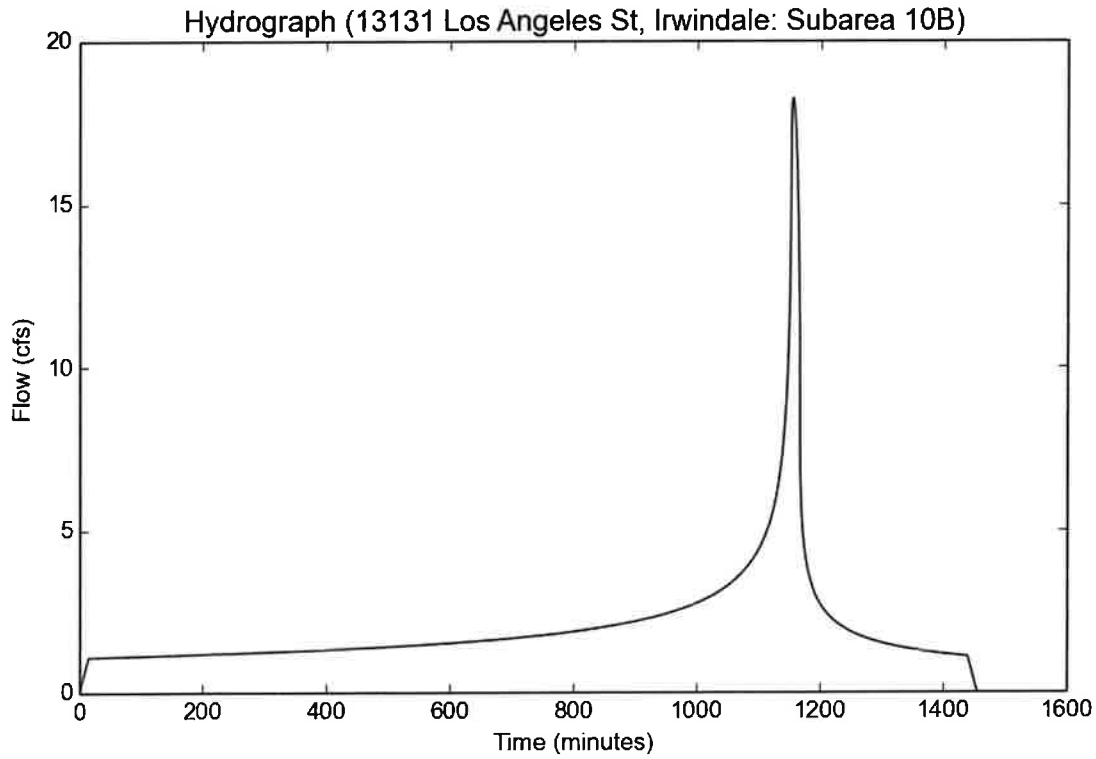
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing Subarea 10B-7.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 10B
Area (ac)	8.9
Flow Path Length (ft)	1760.0
Flow Path Slope (vft/hft) = (360.20 − 343.60)/1760 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	2.3496
Undeveloped Runoff Coefficient (Cu)	0.5859
Developed Runoff Coefficient (Cd)	0.8717
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	18.2293
Burned Peak Flow Rate (cfs)	18.2293
24-Hr Clear Runoff Volume (ac-ft)	4.0415
24-Hr Clear Runoff Volume (cu-ft)	176048.8438



Peak Flow Hydrologic Analysis

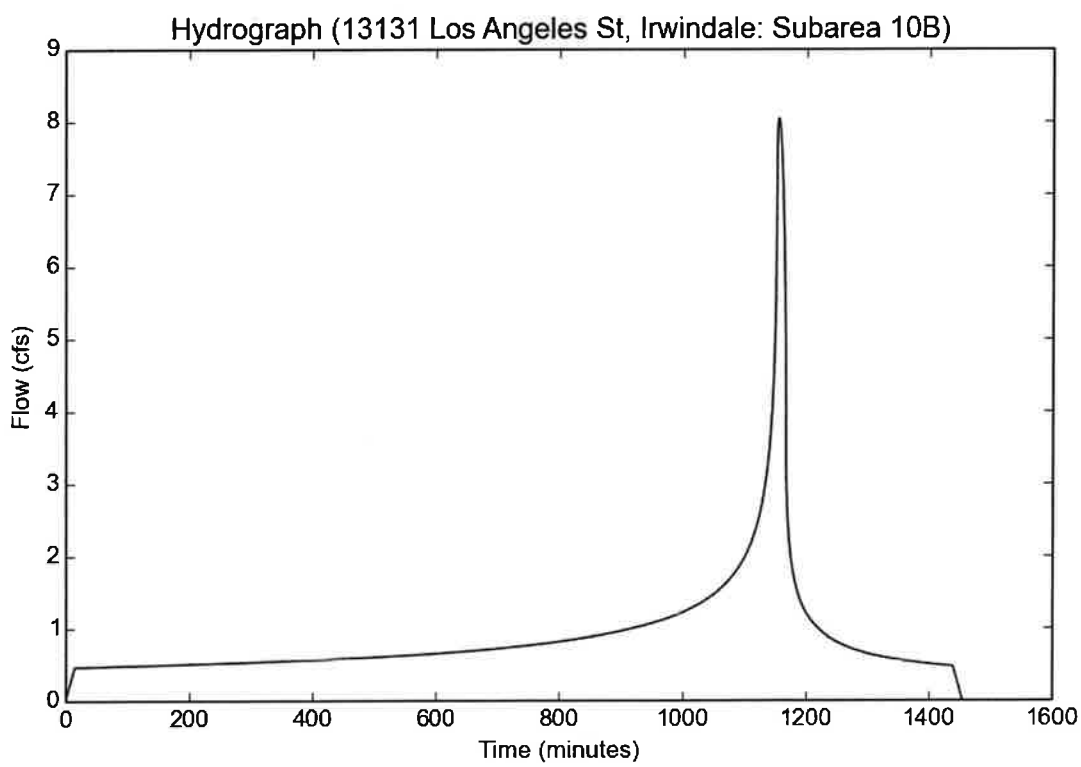
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing Subarea 10B-8.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 10B
Area (ac)	3.8
Flow Path Length (ft)	1760.0
Flow Path Slope (vft/hft) = (360.20-343.60)/1760 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	2.3496
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	15.0
Clear Peak Flow Rate (cfs)	8.0357
Burned Peak Flow Rate (cfs)	8.0357
24-Hr Clear Runoff Volume (ac-ft)	1.7703
24-Hr Clear Runoff Volume (cu-ft)	77112.3814



Peak Flow Hydrologic Analysis

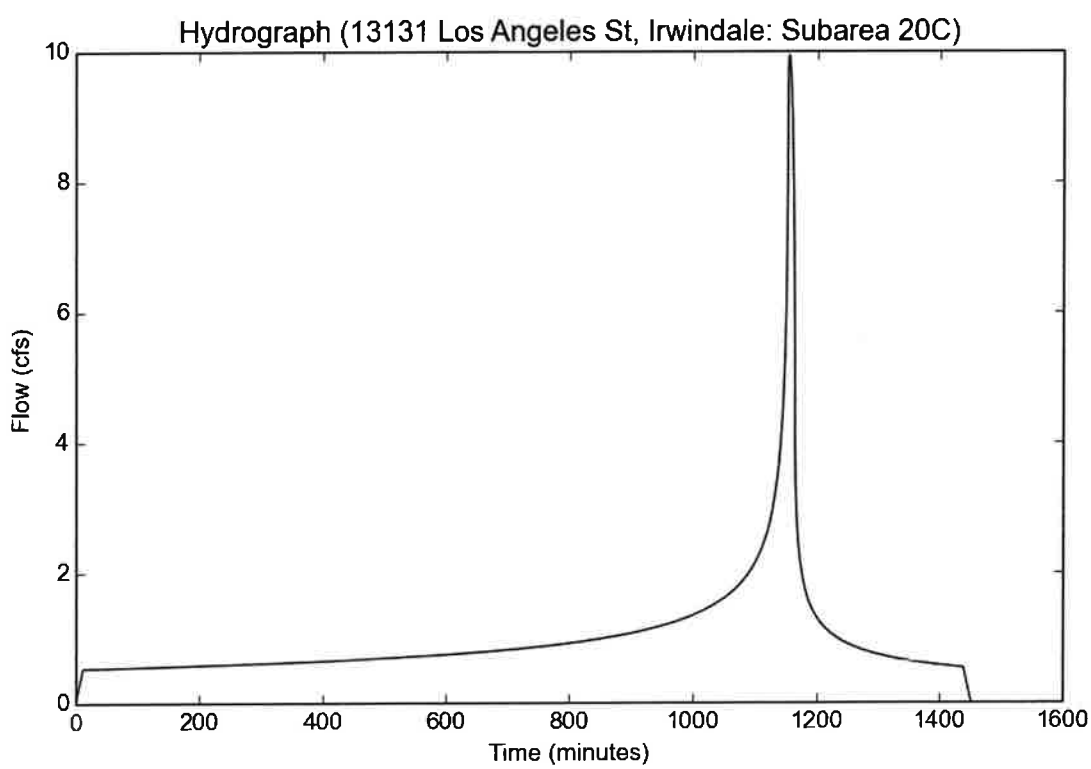
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing Subarea 20C-7.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 20C
Area (ac)	4.35
Flow Path Length (ft)	1260.0
Flow Path Slope (vft/hft) = (357.70-345.60)/1260 =	0.01
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	2.6094
Undeveloped Runoff Coefficient (Cu)	0.6194
Developed Runoff Coefficient (Cd)	0.8748
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	9.9294
Burned Peak Flow Rate (cfs)	9.9294
24-Hr Clear Runoff Volume (ac-ft)	1.9755
24-Hr Clear Runoff Volume (cu-ft)	86054.5537



Peak Flow Hydrologic Analysis

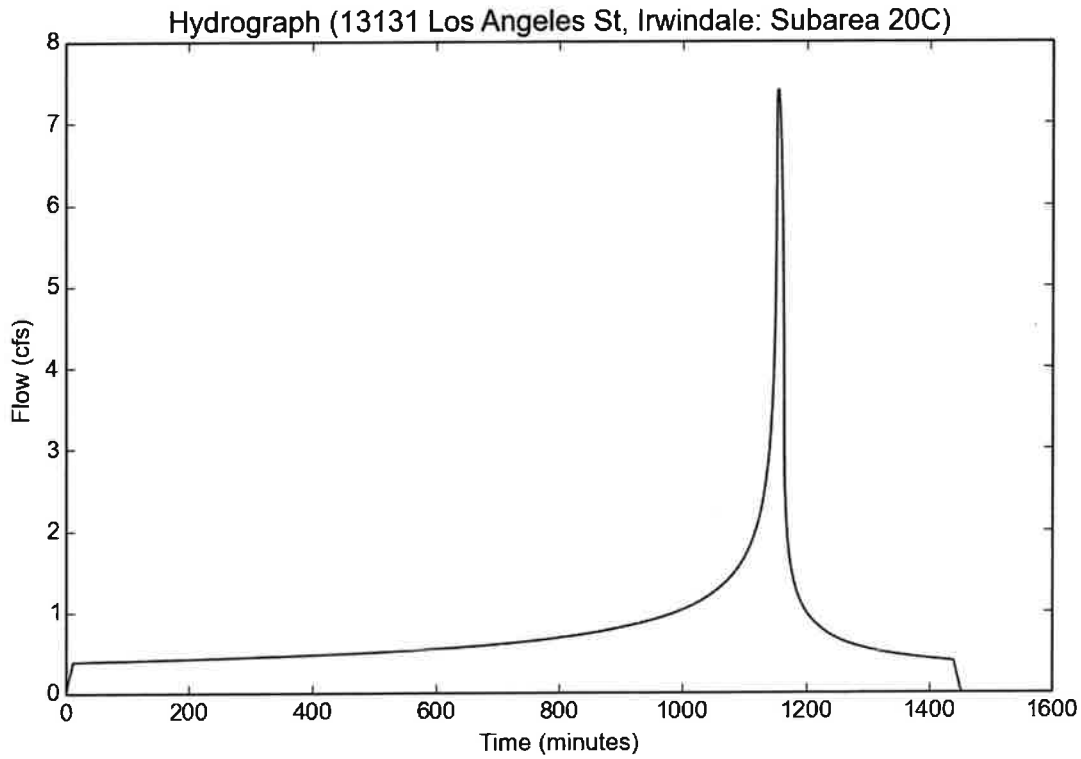
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3663 Existing Subarea 20C-8.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 20C
Area (ac)	3.15
Flow Path Length (ft)	1260.0
Flow Path Slope (vft/hft) = (357.70-345.60)/1260 =	0.01
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	2.6094
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	12.0
Clear Peak Flow Rate (cfs)	7.3978
Burned Peak Flow Rate (cfs)	7.3978
24-Hr Clear Runoff Volume (ac-ft)	1.4674
24-Hr Clear Runoff Volume (cu-ft)	63919.2279



PROPOSED CONDITION
25-YEAR

Peak Flow Hydrologic Analysis

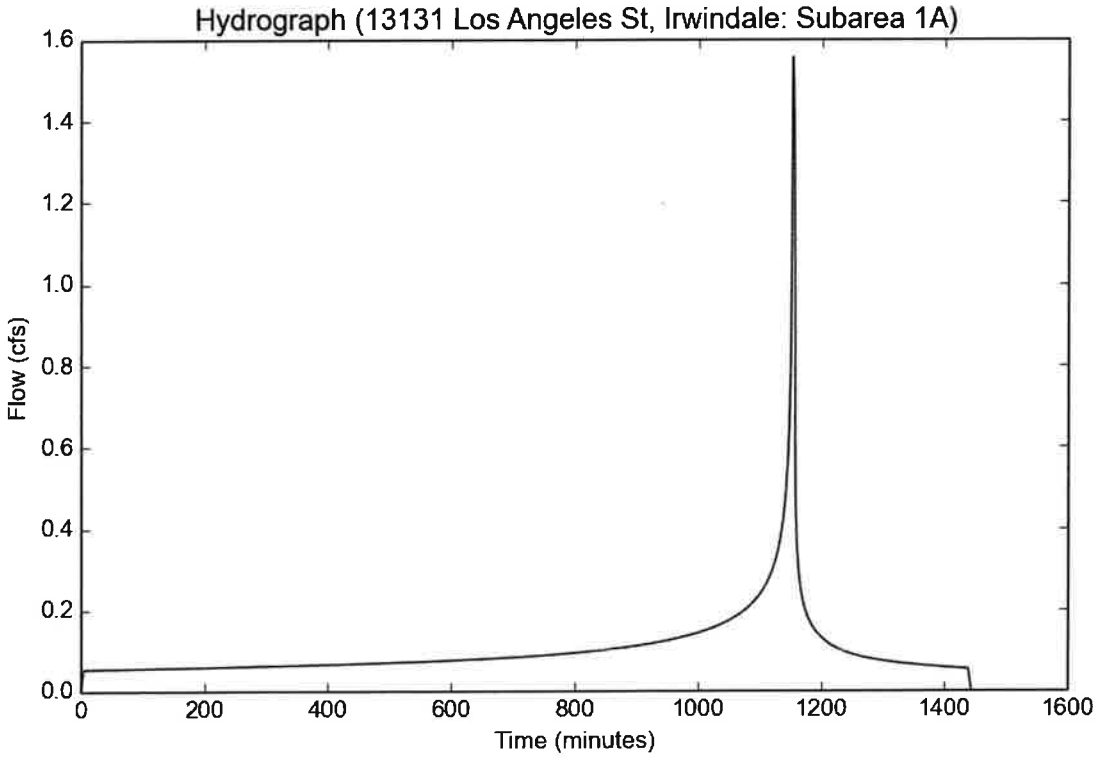
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 1A.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 1A
Area (ac)	0.5
Flow Path Length (ft)	60.0
Flow Path Slope (vft/hft) = (361.26-359.60)/ 60 =	0.028
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	3.4573
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.5558
Burned Peak Flow Rate (cfs)	1.5558
24-Hr Clear Runoff Volume (ac-ft)	0.2036
24-Hr Clear Runoff Volume (cu-ft)	8870.3978



Peak Flow Hydrologic Analysis

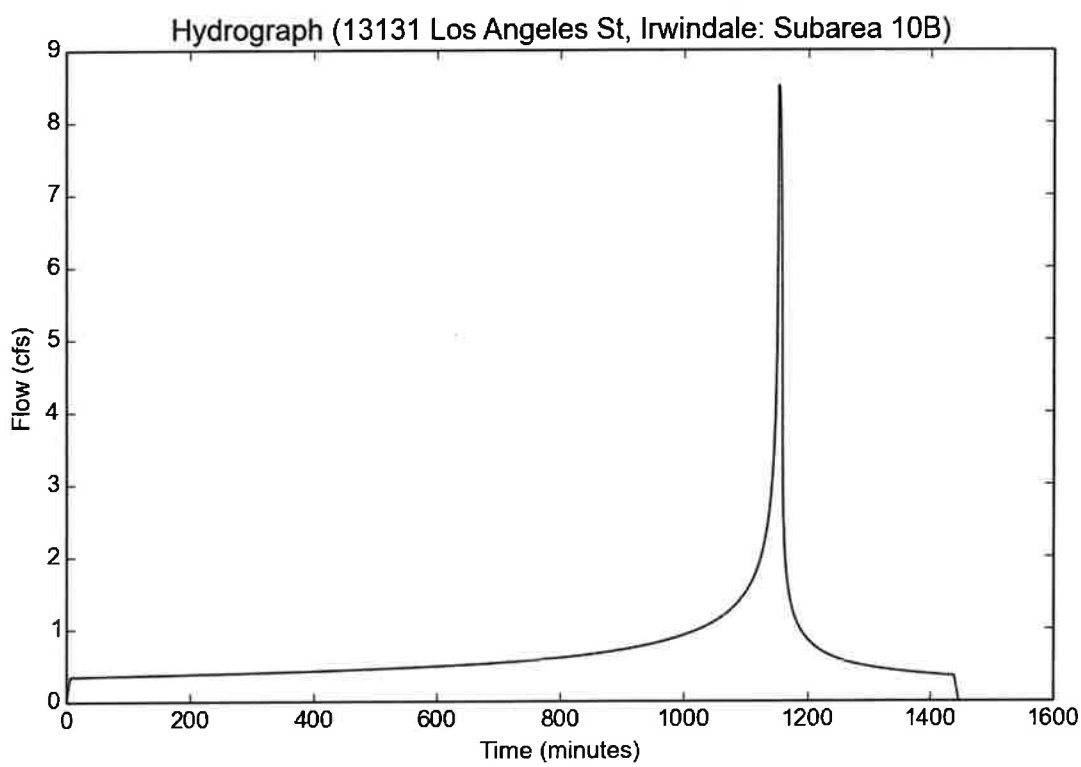
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 10B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 10B
Area (ac)	3.2
Flow Path Length (ft)	430.0
Flow Path Slope (vft/hft) = (353.42−350.58)/430 =	0.007
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.9516
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	7.0
Clear Peak Flow Rate (cfs)	8.5007
Burned Peak Flow Rate (cfs)	8.5007
24-Hr Clear Runoff Volume (ac-ft)	1.3033
24-Hr Clear Runoff Volume (cu-ft)	56772.5389



Peak Flow Hydrologic Analysis

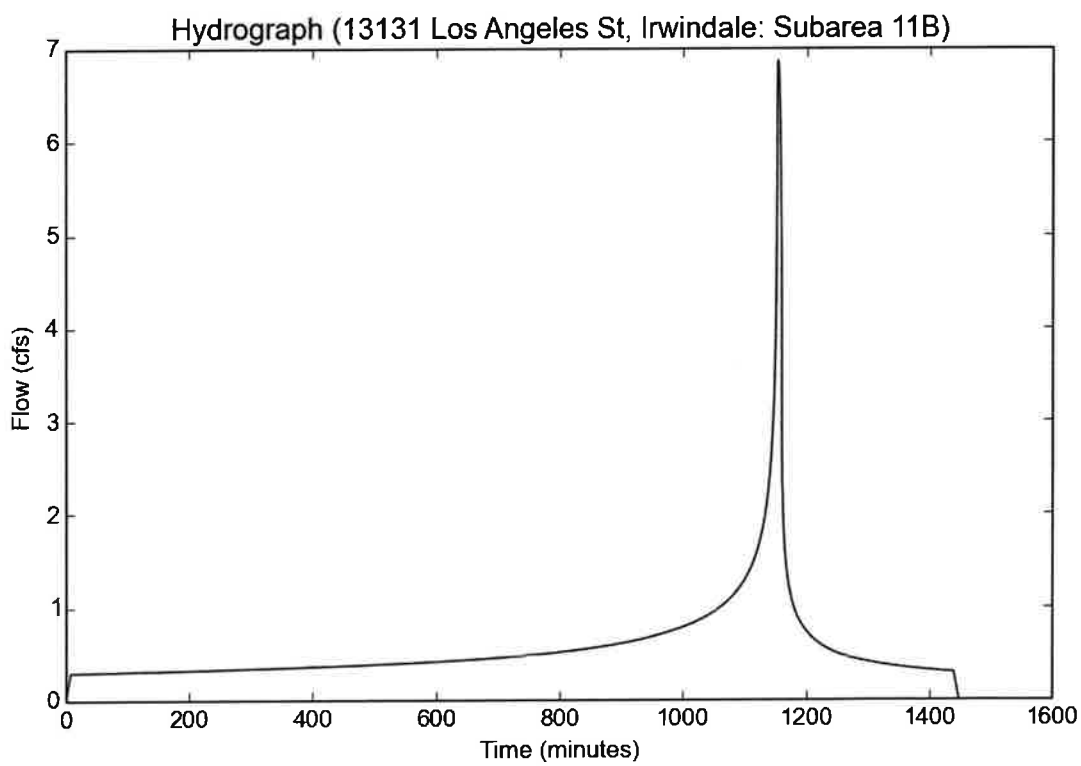
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 11B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 11B
Area (ac)	2.75
Flow Path Length (ft)	730.0
Flow Path Slope (vft/hft) = (361.26-351.11)/730 =	0.014
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.7721
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	6.8609
Burned Peak Flow Rate (cfs)	6.8609
24-Hr Clear Runoff Volume (ac-ft)	1.1201
24-Hr Clear Runoff Volume (cu-ft)	48789.7869



Peak Flow Hydrologic Analysis

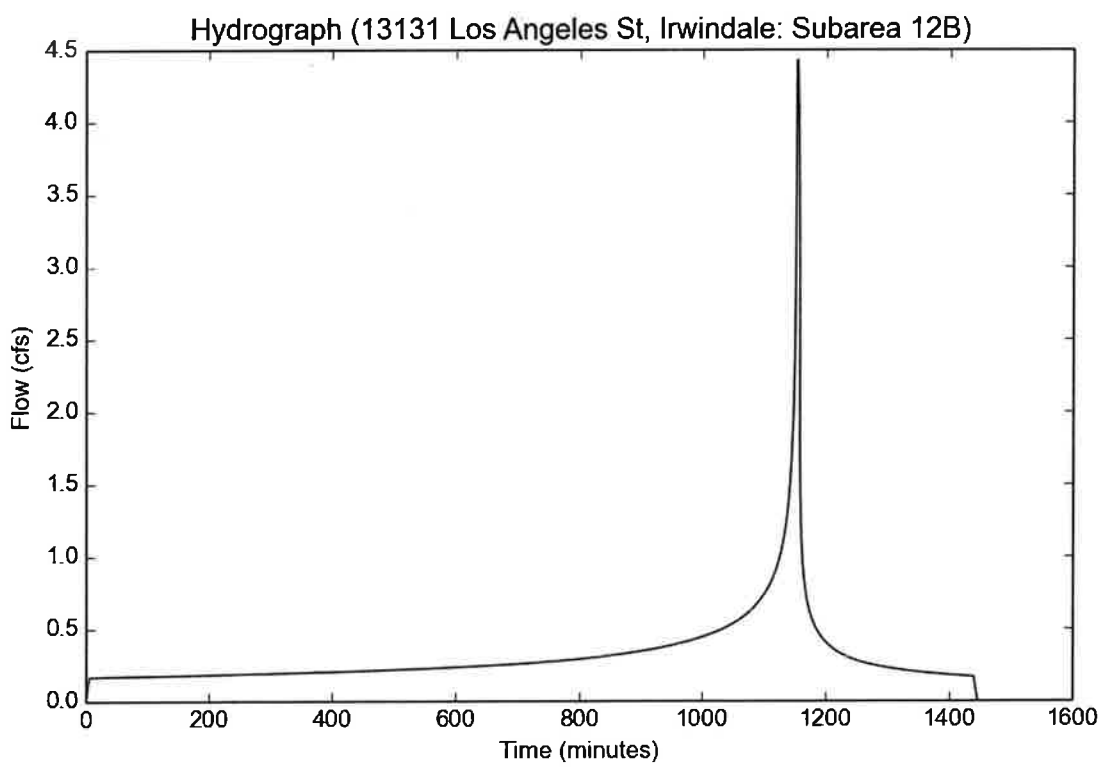
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 12B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 12B
Area (ac)	1.55
Flow Path Length (ft)	460.0
Flow Path Slope (vft/hft) = (358.22-351.11)/460 =	0.015
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	3.1734
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	4.4269
Burned Peak Flow Rate (cfs)	4.4269
24-Hr Clear Runoff Volume (ac-ft)	0.6313
24-Hr Clear Runoff Volume (cu-ft)	27498.7112



Peak Flow Hydrologic Analysis

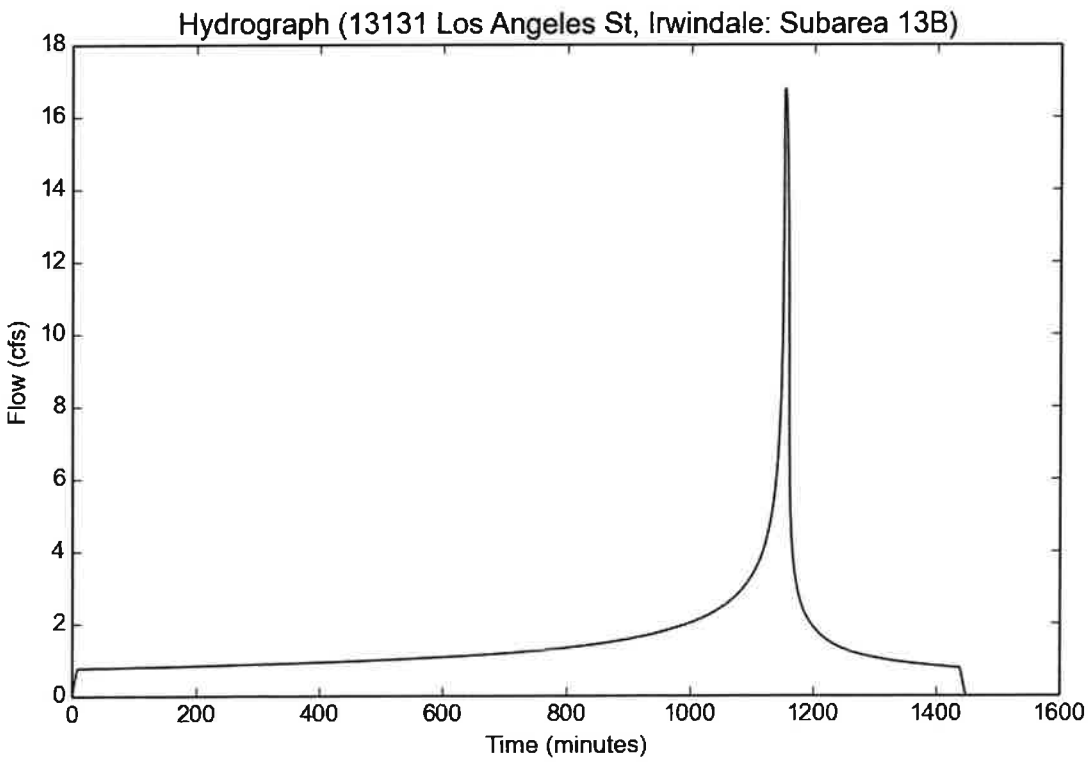
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 13B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 13B
Area (ac)	7.1
Flow Path Length (ft)	665.0
Flow Path Slope (vft/hft) = (354.63-348.81)/665 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.6228
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	16.7596
Burned Peak Flow Rate (cfs)	16.7596
24-Hr Clear Runoff Volume (ac-ft)	2.8918
24-Hr Clear Runoff Volume (cu-ft)	125968.6553



Peak Flow Hydrologic Analysis

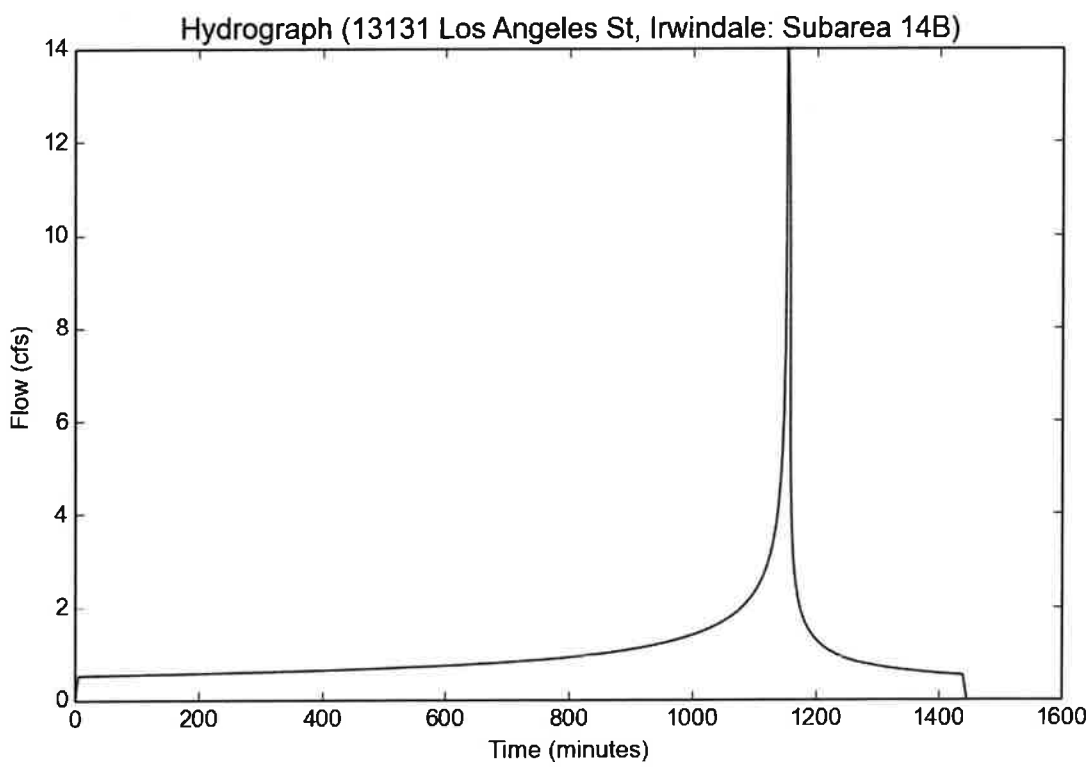
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 14B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 14B
Area (ac)	4.9
Flow Path Length (ft)	375.0
Flow Path Slope (vft/hft) = (351.92-348.51)/375 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	3.1734
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	13.9947
Burned Peak Flow Rate (cfs)	13.9947
24-Hr Clear Runoff Volume (ac-ft)	1.9957
24-Hr Clear Runoff Volume (cu-ft)	86931.4097



Peak Flow Hydrologic Analysis

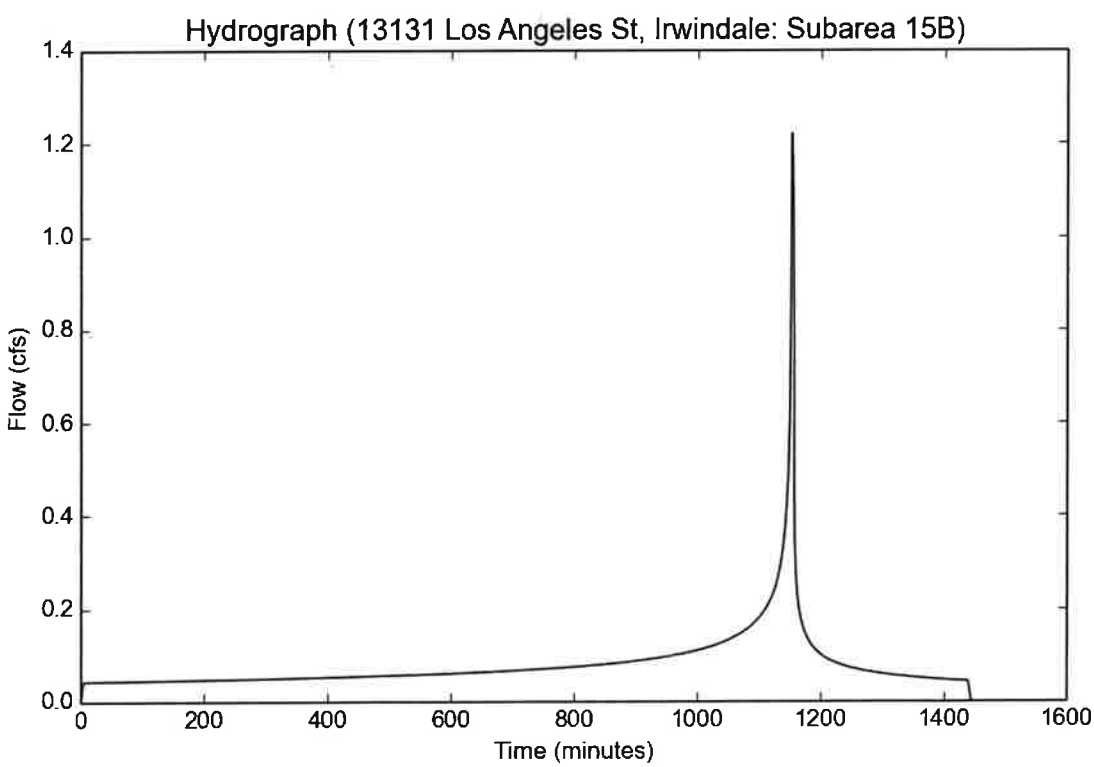
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 15B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 15B
Area (ac)	0.4
Flow Path Length (ft)	275.0
Flow Path Slope (vft/hft) = (350.38−346.50)/275 =	0.014
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	3.4573
Undeveloped Runoff Coefficient (Cu)	0.701
Developed Runoff Coefficient (Cd)	0.8821
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2199
Burned Peak Flow Rate (cfs)	1.2199
24-Hr Clear Runoff Volume (ac-ft)	0.1594
24-Hr Clear Runoff Volume (cu-ft)	6943.4642



Peak Flow Hydrologic Analysis

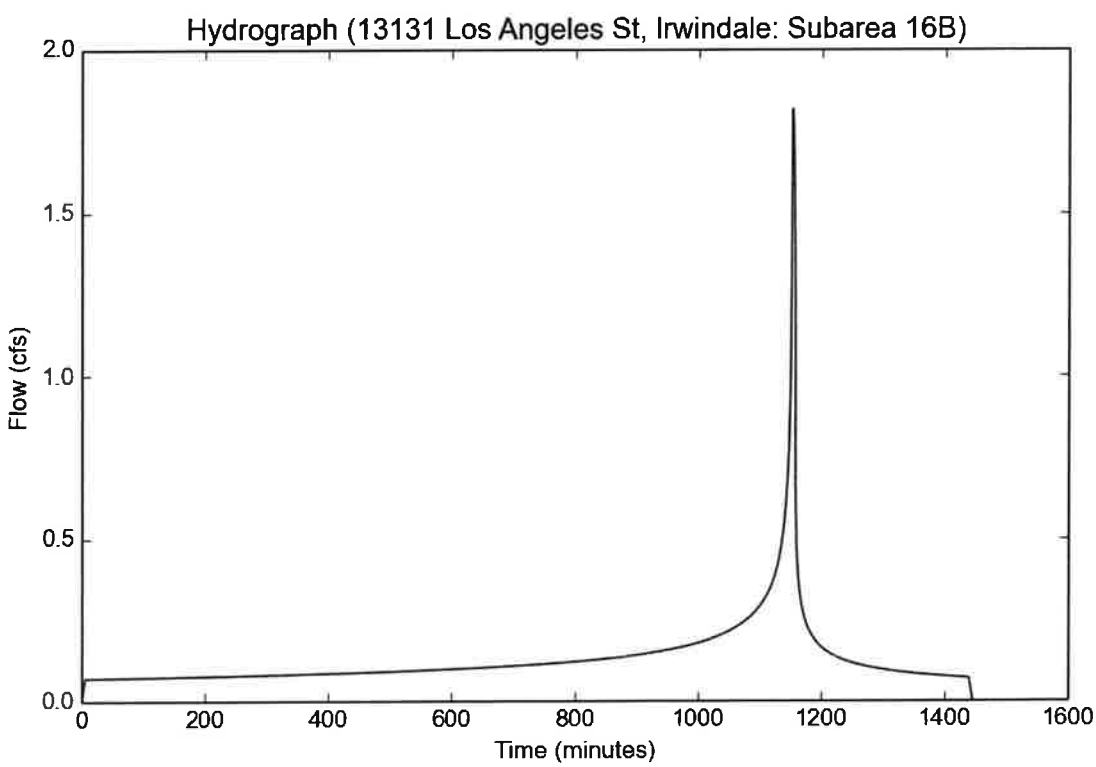
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 16B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 16B
Area (ac)	0.65
Flow Path Length (ft)	355.0
Flow Path Slope (vft/hft) = (349.78−345.57)/355 =	0.012
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	3.1734
Undeveloped Runoff Coefficient (Cu)	0.6775
Developed Runoff Coefficient (Cd)	0.88
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	1.8151
Burned Peak Flow Rate (cfs)	1.8151
24-Hr Clear Runoff Volume (ac-ft)	0.259
24-Hr Clear Runoff Volume (cu-ft)	11282.7322



Peak Flow Hydrologic Analysis

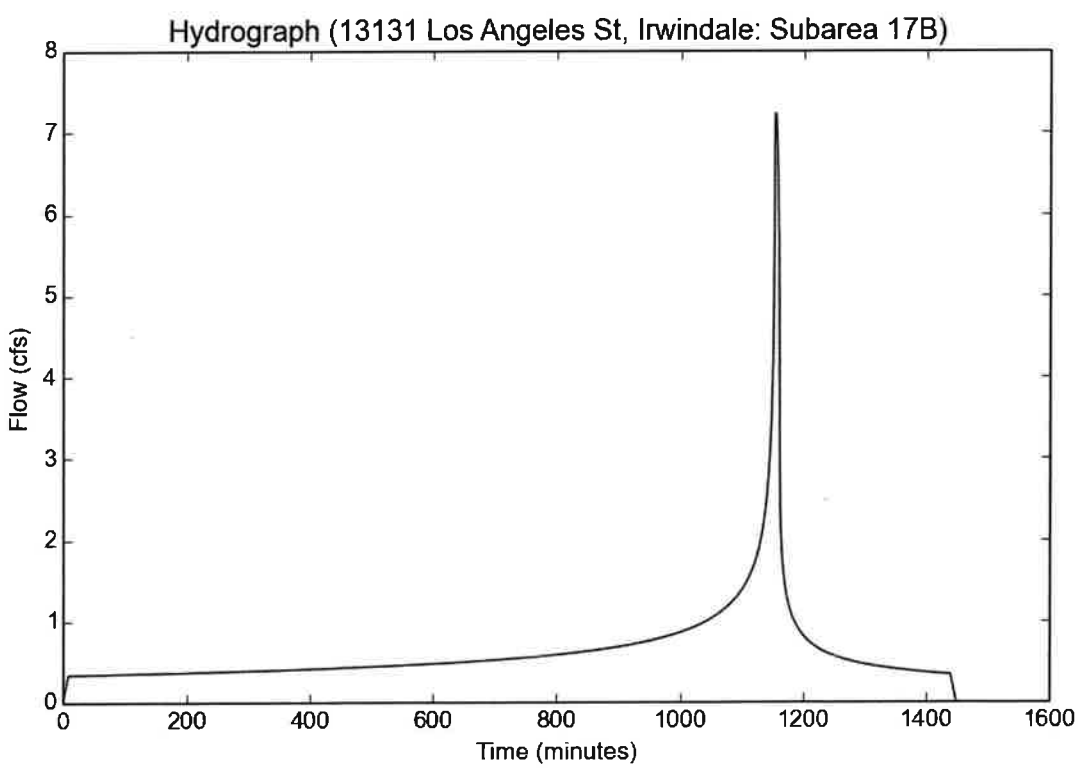
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 17B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 17B
Area (ac)	3.15
Flow Path Length (ft)	770.0
Flow Path Slope (vft/hft) = (354.00-345.42)/770 =	0.011
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	2.6228
Undeveloped Runoff Coefficient (Cu)	0.6209
Developed Runoff Coefficient (Cd)	0.8749
Time of Concentration (min)	9.0
Clear Peak Flow Rate (cfs)	7.2281
Burned Peak Flow Rate (cfs)	7.2281
24-Hr Clear Runoff Volume (ac-ft)	1.2551
24-Hr Clear Runoff Volume (cu-ft)	54671.7568



Peak Flow Hydrologic Analysis

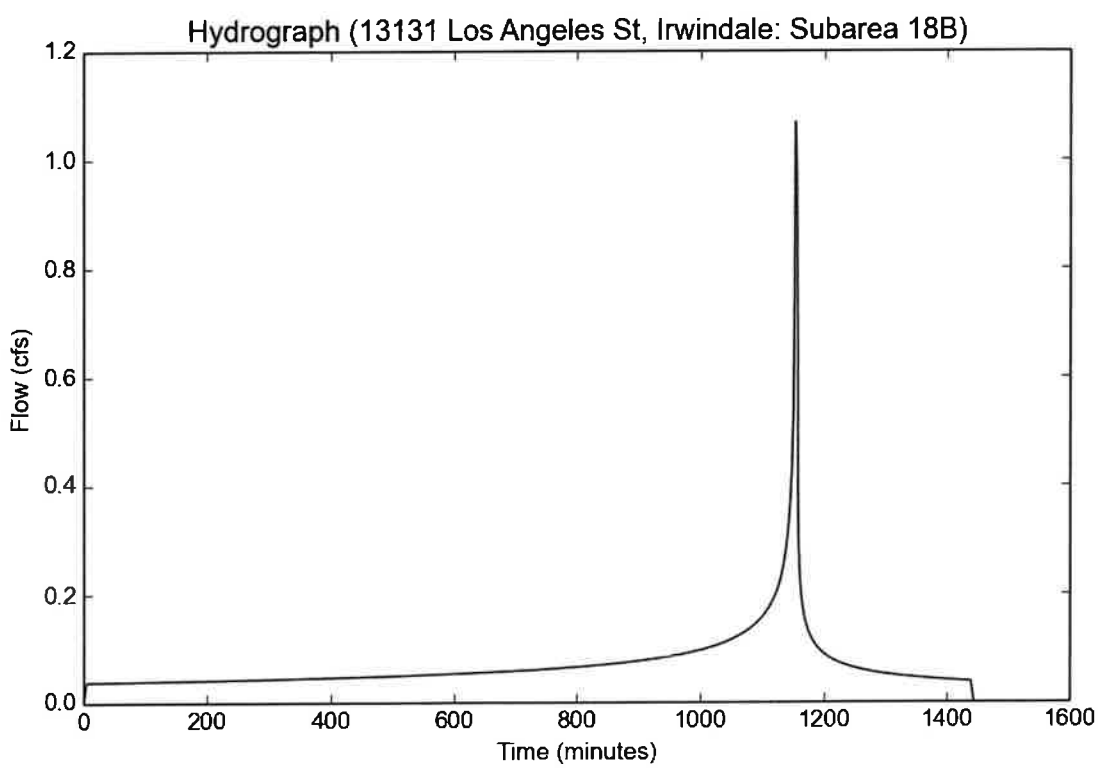
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 18B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 18B
Area (ac)	0.35
Flow Path Length (ft)	95.0
Flow Path Slope (vft/hft) = (347.58-343.32)/ 95 =	0.045
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	3.4573
Undeveloped Runoff Coefficient (Cu)	0.701
Developed Runoff Coefficient (Cd)	0.8821
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.0674
Burned Peak Flow Rate (cfs)	1.0674
24-Hr Clear Runoff Volume (ac-ft)	0.1395
24-Hr Clear Runoff Volume (cu-ft)	6075.5312



Peak Flow Hydrologic Analysis

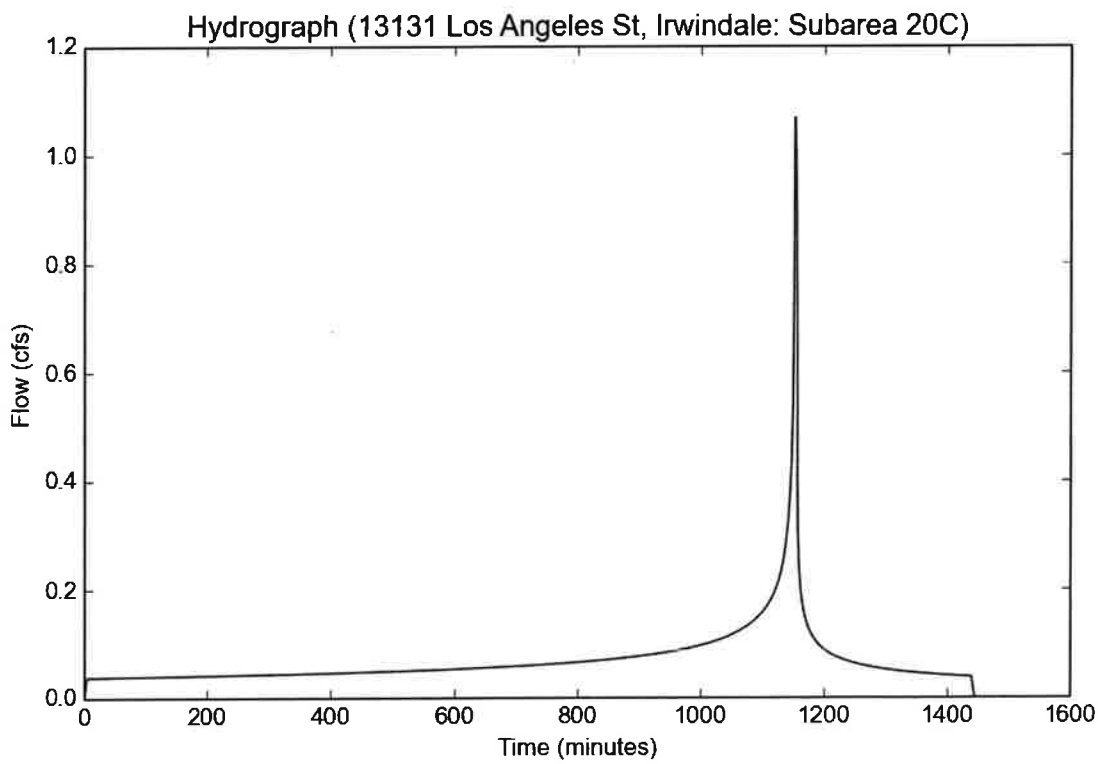
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed 25 Subarea 20C.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 20C
Area (ac)	0.35
Flow Path Length (ft)	195.0
Flow Path Slope (vft/hft) = (351.92-345.94)/195 =	0.036
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	25-yr
Fire Factor	0
LID	False

Output Results

Modeled (25-yr) Rainfall Depth (in)	5.7948
Peak Intensity (in/hr)	3.4573
Undeveloped Runoff Coefficient (Cu)	0.701
Developed Runoff Coefficient (Cd)	0.8821
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.0674
Burned Peak Flow Rate (cfs)	1.0674
24-Hr Clear Runoff Volume (ac-ft)	0.1395
24-Hr Clear Runoff Volume (cu-ft)	6075.5312



PROPOSED CONDITION
50-YEAR

Peak Flow Hydrologic Analysis

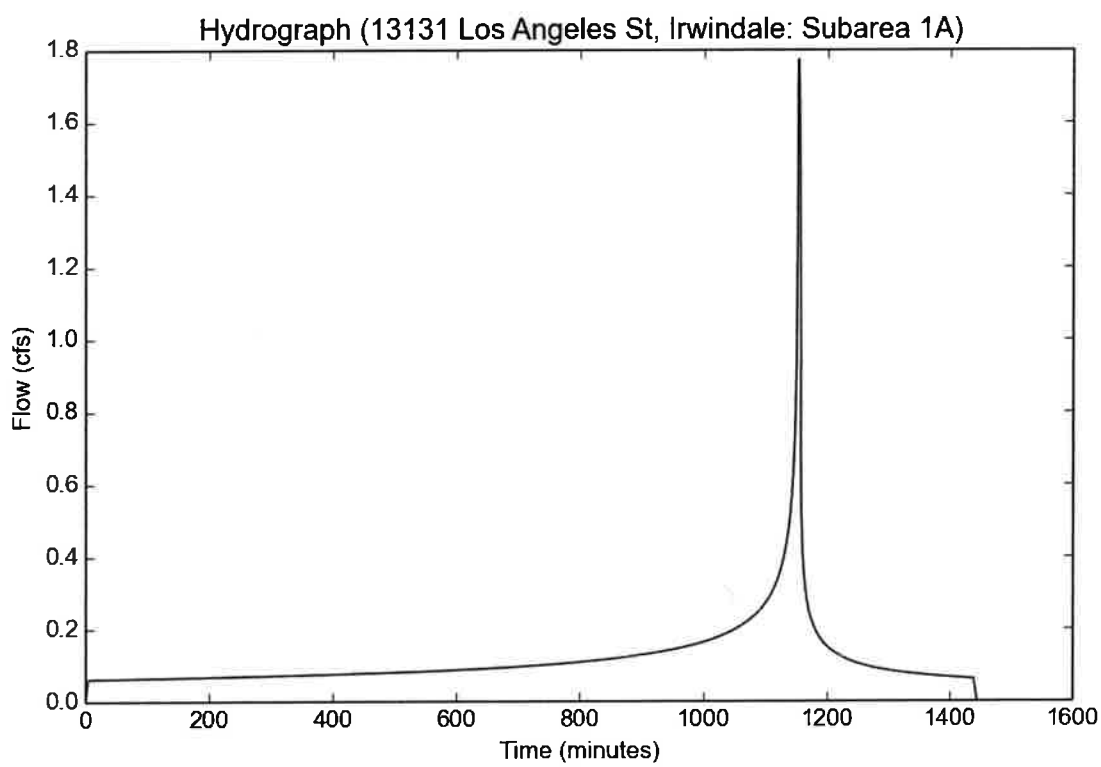
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 1A.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 1A
Area (ac)	0.5
Flow Path Length (ft)	60.0
Flow Path Slope (vft/hft) = (361.26-359.60)/ 60 =	0.028
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.9377
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.772
Burned Peak Flow Rate (cfs)	1.772
24-Hr Clear Runoff Volume (ac-ft)	0.2329
24-Hr Clear Runoff Volume (cu-ft)	10144.833



Peak Flow Hydrologic Analysis

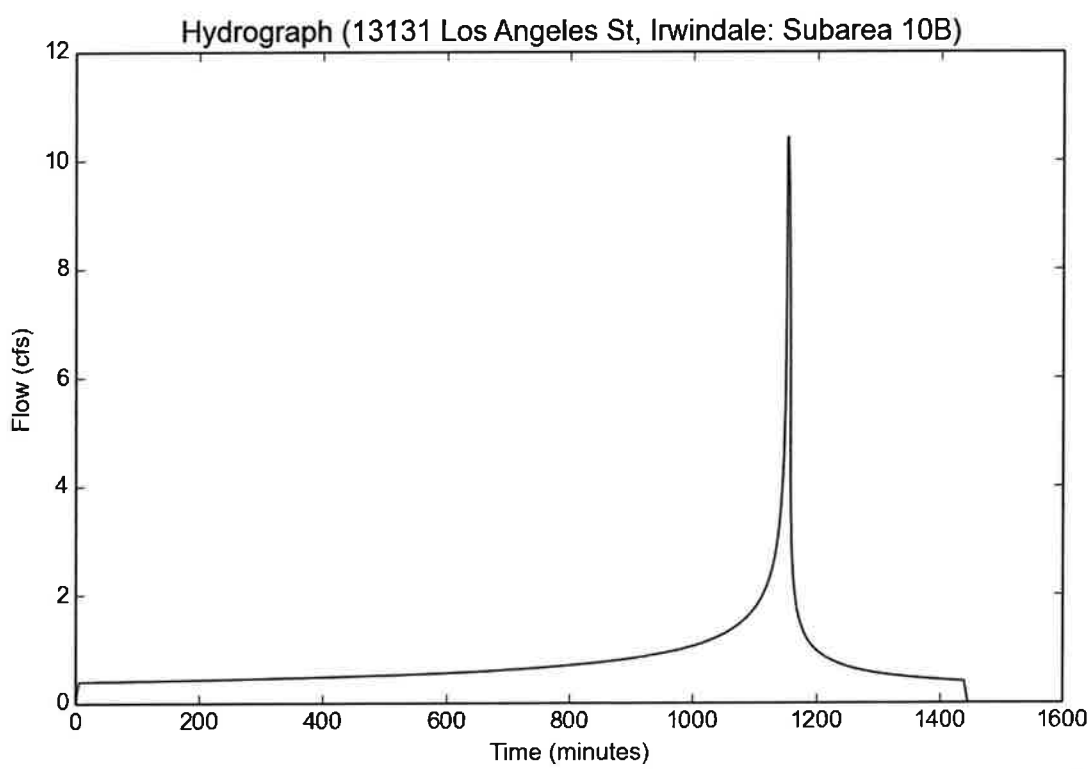
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 10B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 10B
Area (ac)	3.2
Flow Path Length (ft)	430.0
Flow Path Slope (vft/hft) = (353.42-350.58)/430 =	0.007
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.6144
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	10.4094
Burned Peak Flow Rate (cfs)	10.4094
24-Hr Clear Runoff Volume (ac-ft)	1.4905
24-Hr Clear Runoff Volume (cu-ft)	64927.7589



Peak Flow Hydrologic Analysis

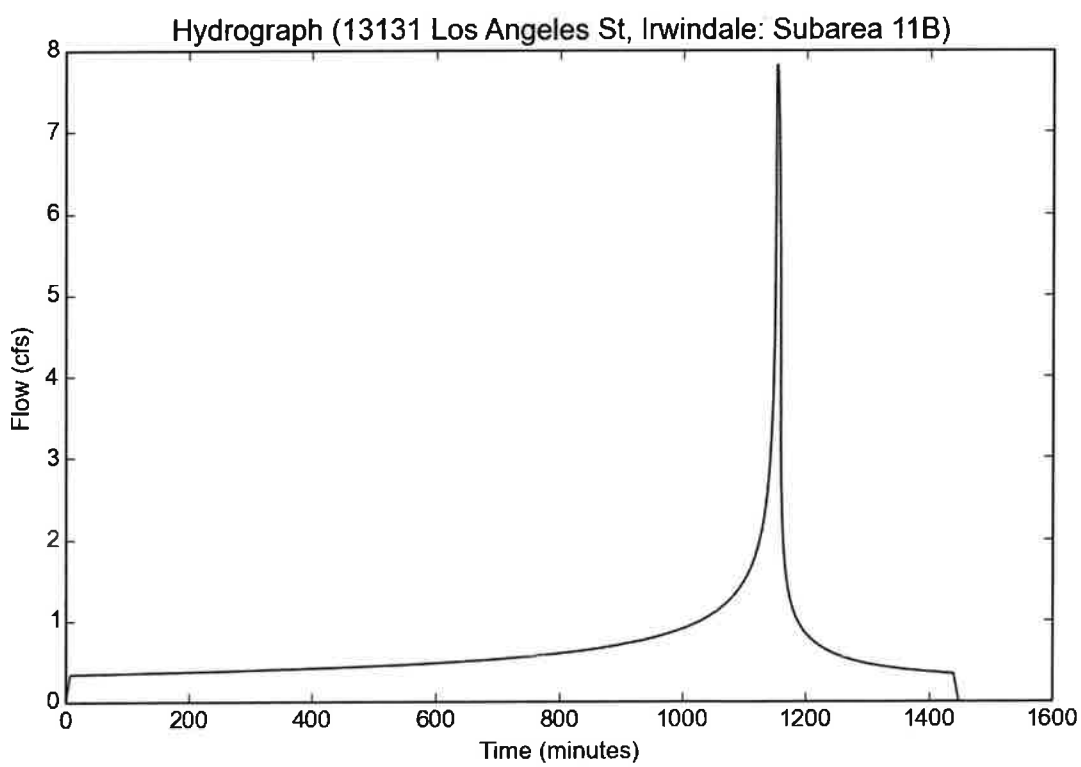
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 11B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 11B
Area (ac)	2.75
Flow Path Length (ft)	730.0
Flow Path Slope (vft/hft) = (361.26-351.11) / 730 =	0.014
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.1573
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	7.8142
Burned Peak Flow Rate (cfs)	7.8142
24-Hr Clear Runoff Volume (ac-ft)	1.281
24-Hr Clear Runoff Volume (cu-ft)	55798.9578



Peak Flow Hydrologic Analysis

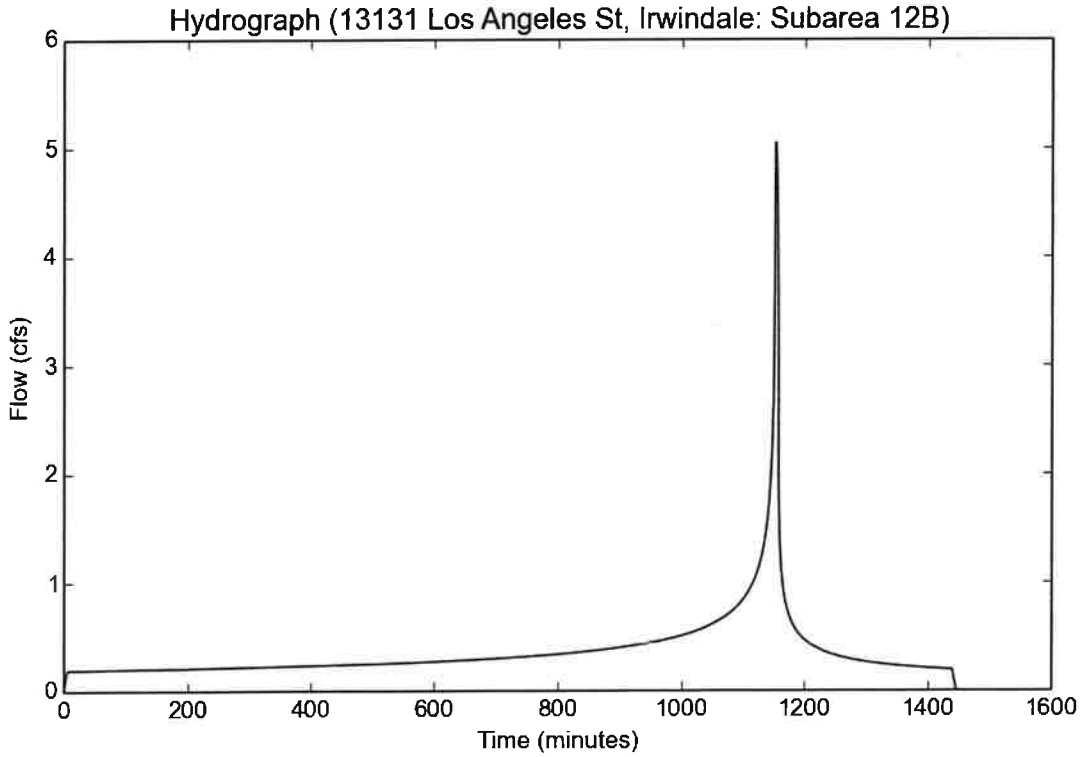
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 12B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 12B
Area (ac)	1.55
Flow Path Length (ft)	460.0
Flow Path Slope (vft/hft) = (358.22-351.11)/460 =	0.015
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.6144
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	6.0
Clear Peak Flow Rate (cfs)	5.042
Burned Peak Flow Rate (cfs)	5.042
24-Hr Clear Runoff Volume (ac-ft)	0.722
24-Hr Clear Runoff Volume (cu-ft)	31449.3832



Peak Flow Hydrologic Analysis

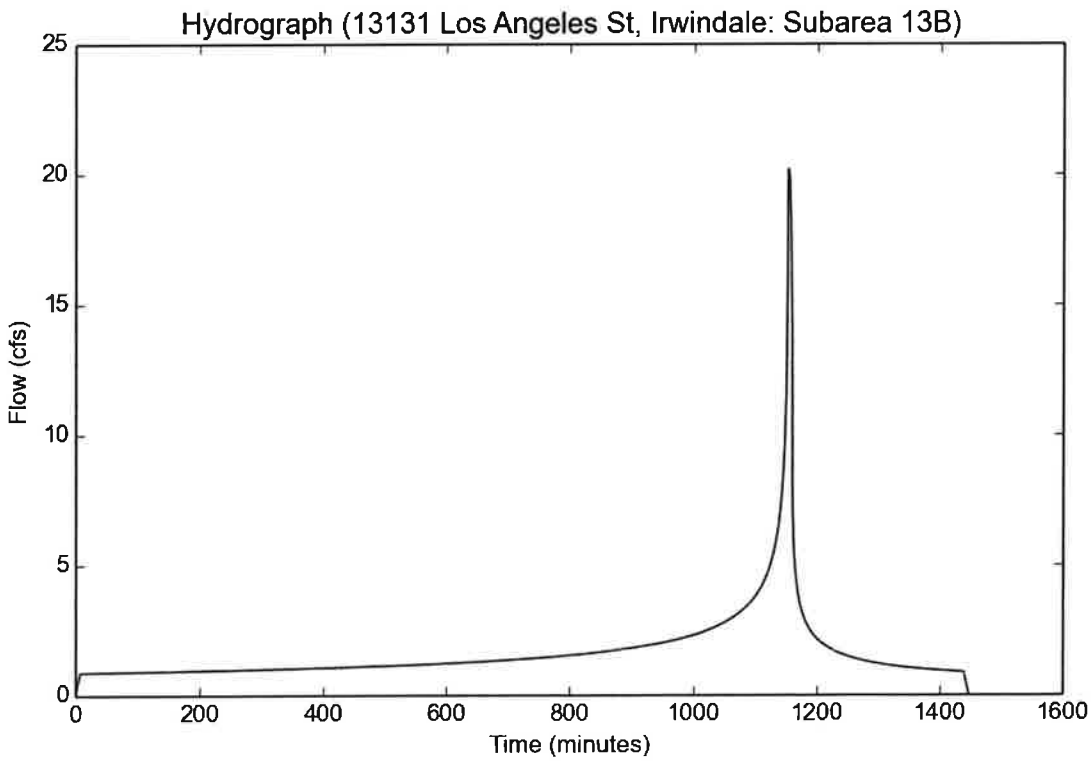
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 13B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 13B
Area (ac)	7.1
Flow Path Length (ft)	665.0
Flow Path Slope (vft/hft) = (354.63-348.81)/665 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.1573
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	20.1749
Burned Peak Flow Rate (cfs)	20.1749
24-Hr Clear Runoff Volume (ac-ft)	3.3072
24-Hr Clear Runoff Volume (cu-ft)	144062.7639



Peak Flow Hydrologic Analysis

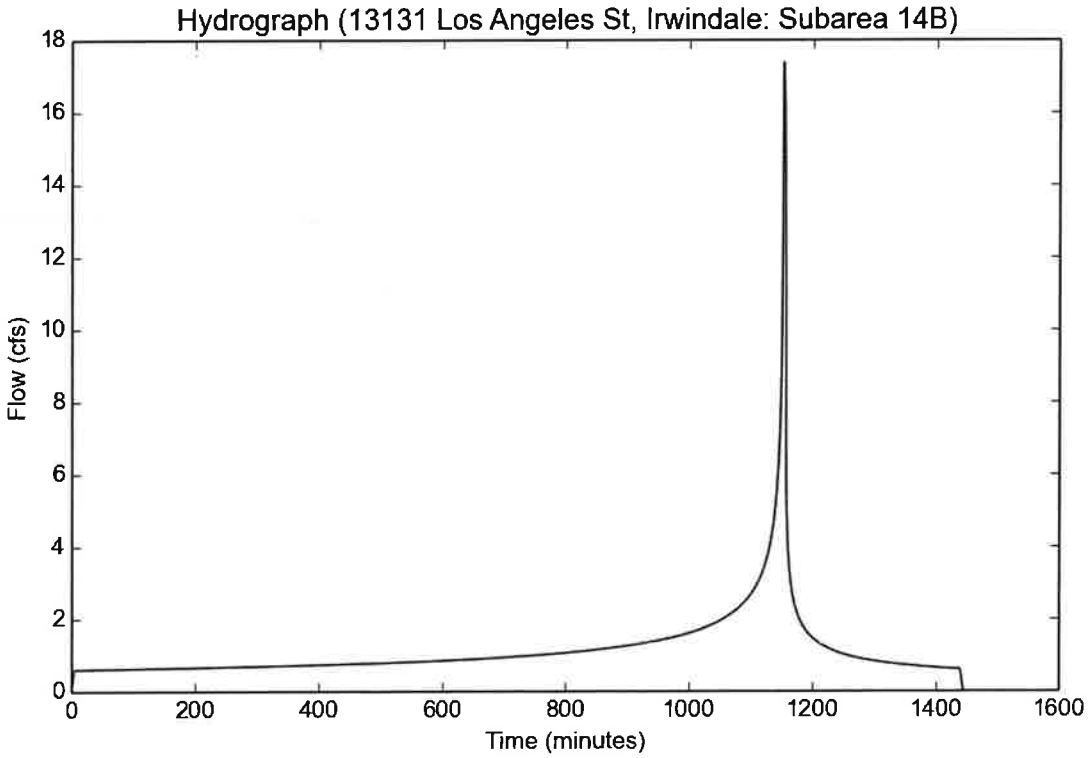
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 14B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 14B
Area (ac)	4.9
Flow Path Length (ft)	375.0
Flow Path Slope (vft/hft) = (351.92-348.51)/375 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.9377
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	17.3654
Burned Peak Flow Rate (cfs)	17.3654
24-Hr Clear Runoff Volume (ac-ft)	2.2824
24-Hr Clear Runoff Volume (cu-ft)	99419.3631



Peak Flow Hydrologic Analysis

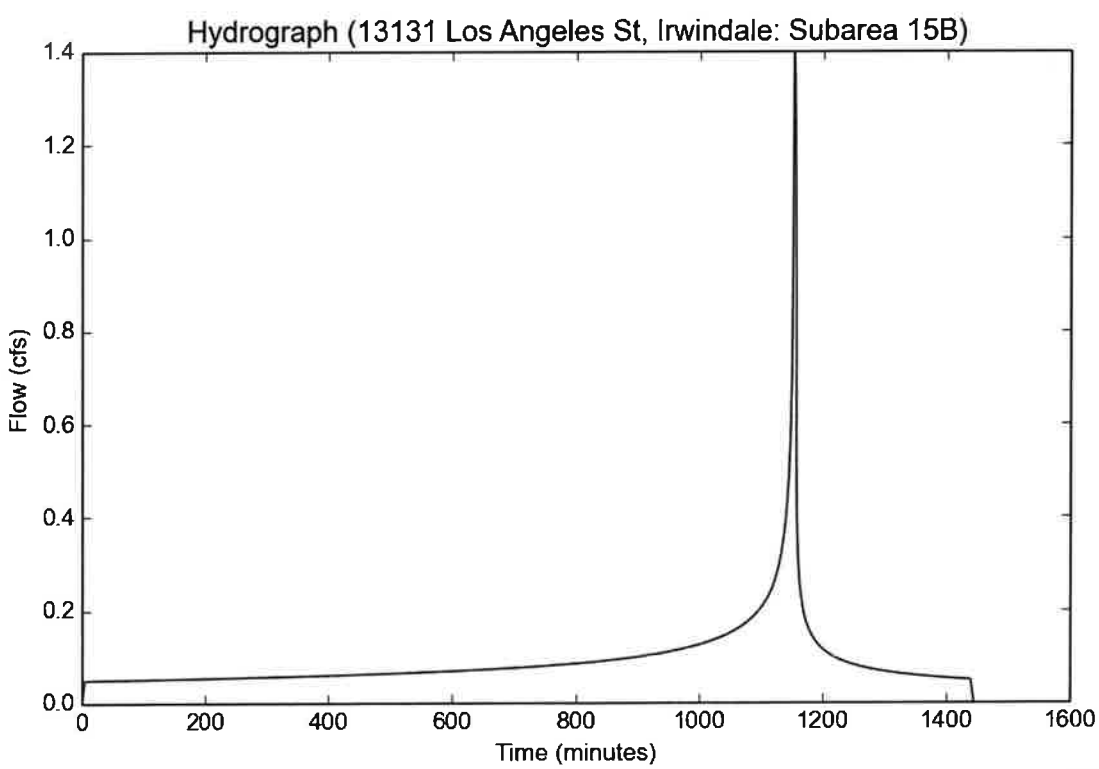
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 15B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 15B
Area (ac)	0.4
Flow Path Length (ft)	275.0
Flow Path Slope (vft/hft) = (350.38-346.50)/275 =	0.014
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.9377
Undeveloped Runoff Coefficient (Cu)	0.7407
Developed Runoff Coefficient (Cd)	0.8857
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.395
Burned Peak Flow Rate (cfs)	1.395
24-Hr Clear Runoff Volume (ac-ft)	0.1817
24-Hr Clear Runoff Volume (cu-ft)	7914.9649



Peak Flow Hydrologic Analysis

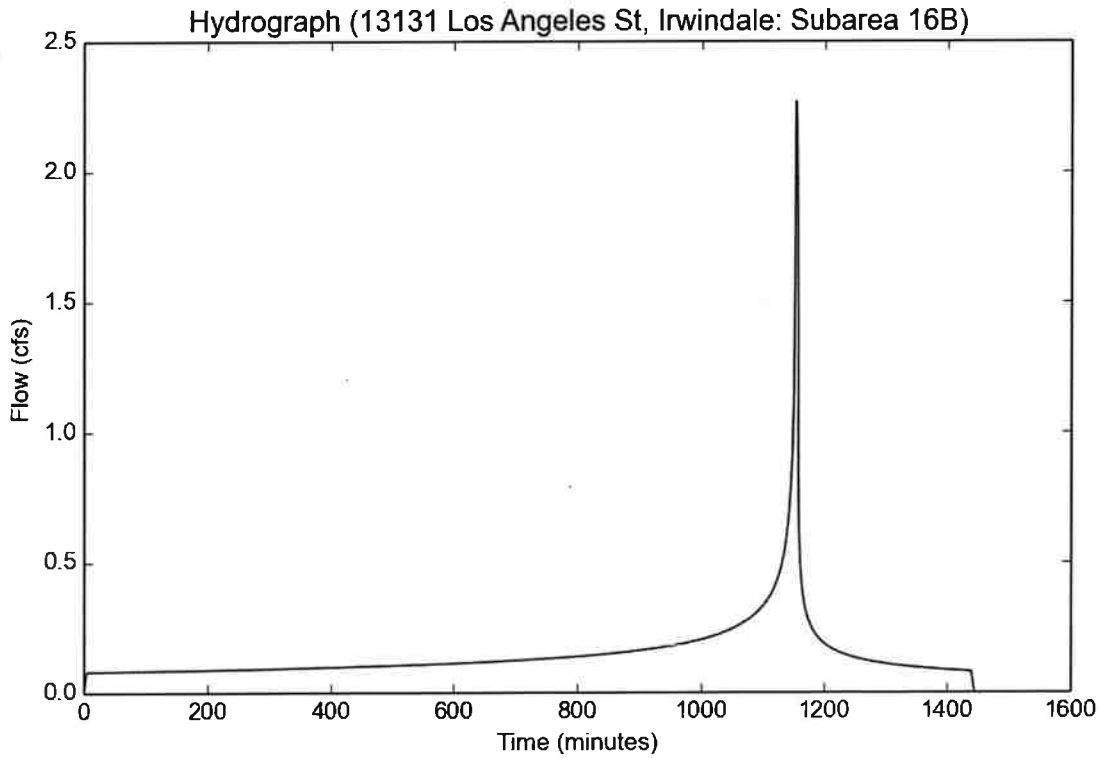
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 16B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 16B
Area (ac)	0.65
Flow Path Length (ft)	355.0
Flow Path Slope (vft/hft) = (349.78-345.57)/355 =	0.012
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.9377
Undeveloped Runoff Coefficient (Cu)	0.7407
Developed Runoff Coefficient (Cd)	0.8857
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	2.2669
Burned Peak Flow Rate (cfs)	2.2669
24-Hr Clear Runoff Volume (ac-ft)	0.2953
24-Hr Clear Runoff Volume (cu-ft)	12861.8179



Peak Flow Hydrologic Analysis

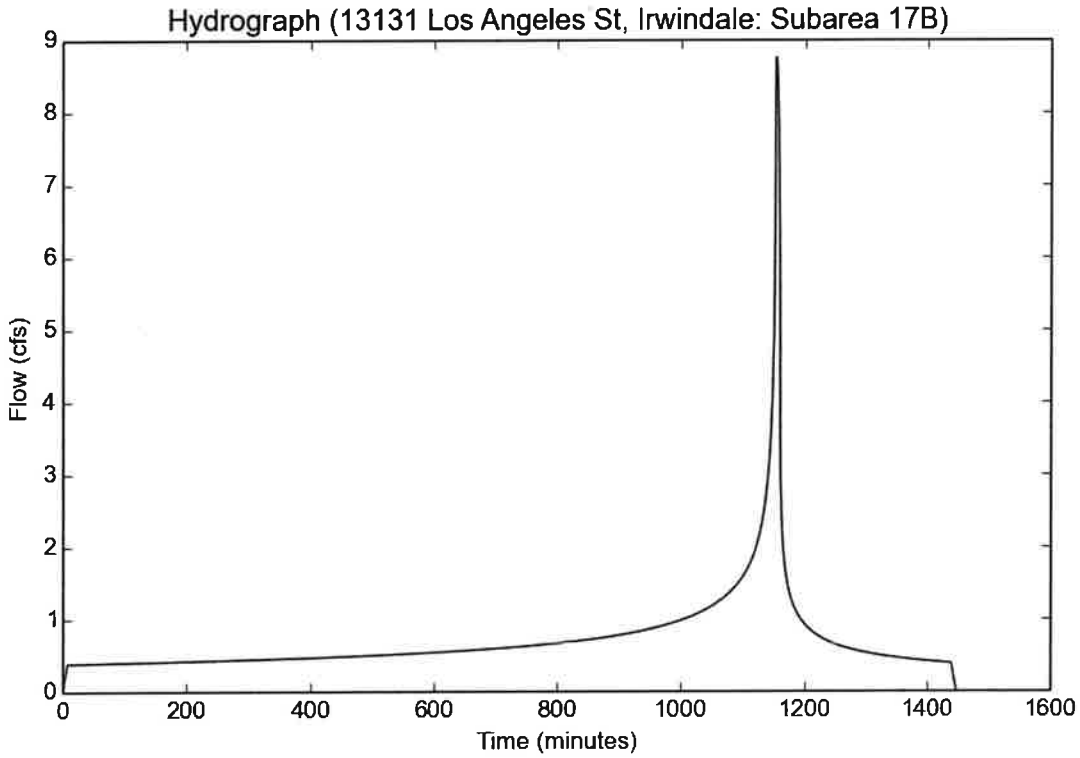
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 17B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 17B
Area (ac)	3.15
Flow Path Length (ft)	770.0
Flow Path Slope (vft/hft) = (354.00 − 345.42)/770 =	0.011
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.1573
Undeveloped Runoff Coefficient (Cu)	0.6762
Developed Runoff Coefficient (Cd)	0.8799
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	8.7505
Burned Peak Flow Rate (cfs)	8.7505
24-Hr Clear Runoff Volume (ac-ft)	1.4307
24-Hr Clear Runoff Volume (cu-ft)	62323.4509



Peak Flow Hydrologic Analysis

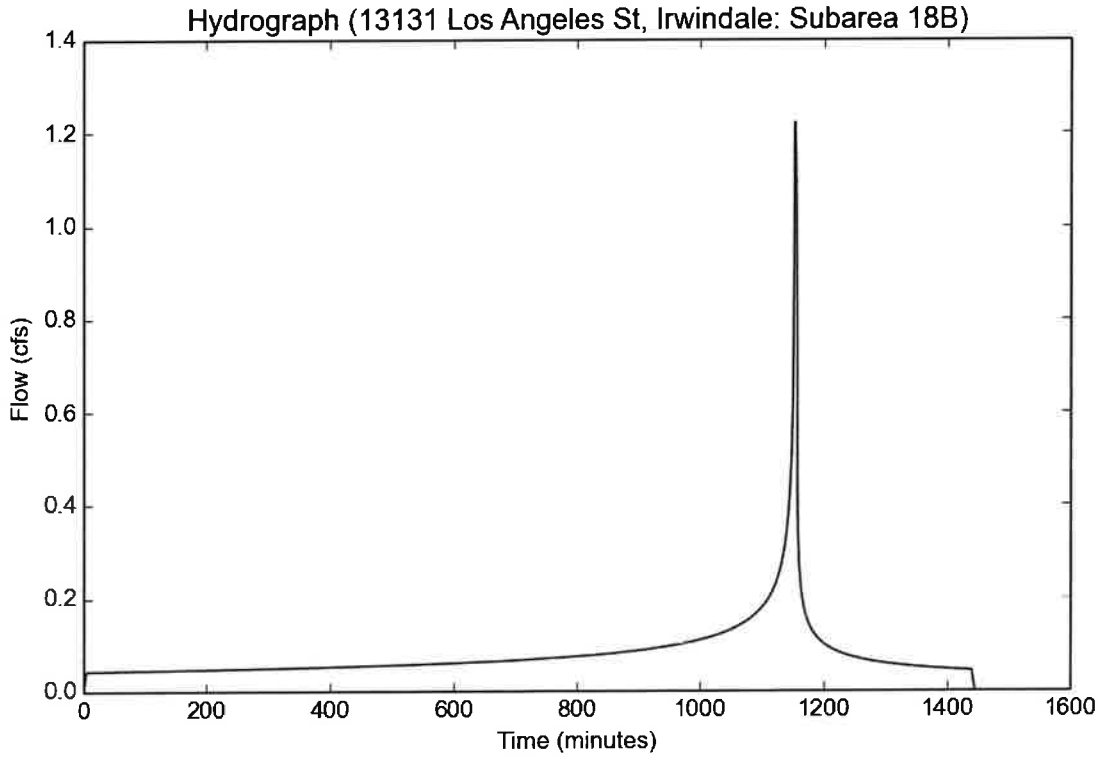
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 18B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 18B
Area (ac)	0.35
Flow Path Length (ft)	95.0
Flow Path Slope (vft/hft) = (347.58 - 343.32)/95 =	0.045
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.9377
Undeveloped Runoff Coefficient (Cu)	0.7407
Developed Runoff Coefficient (Cd)	0.8857
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2206
Burned Peak Flow Rate (cfs)	1.2206
24-Hr Clear Runoff Volume (ac-ft)	0.159
24-Hr Clear Runoff Volume (cu-ft)	6925.5943



Peak Flow Hydrologic Analysis

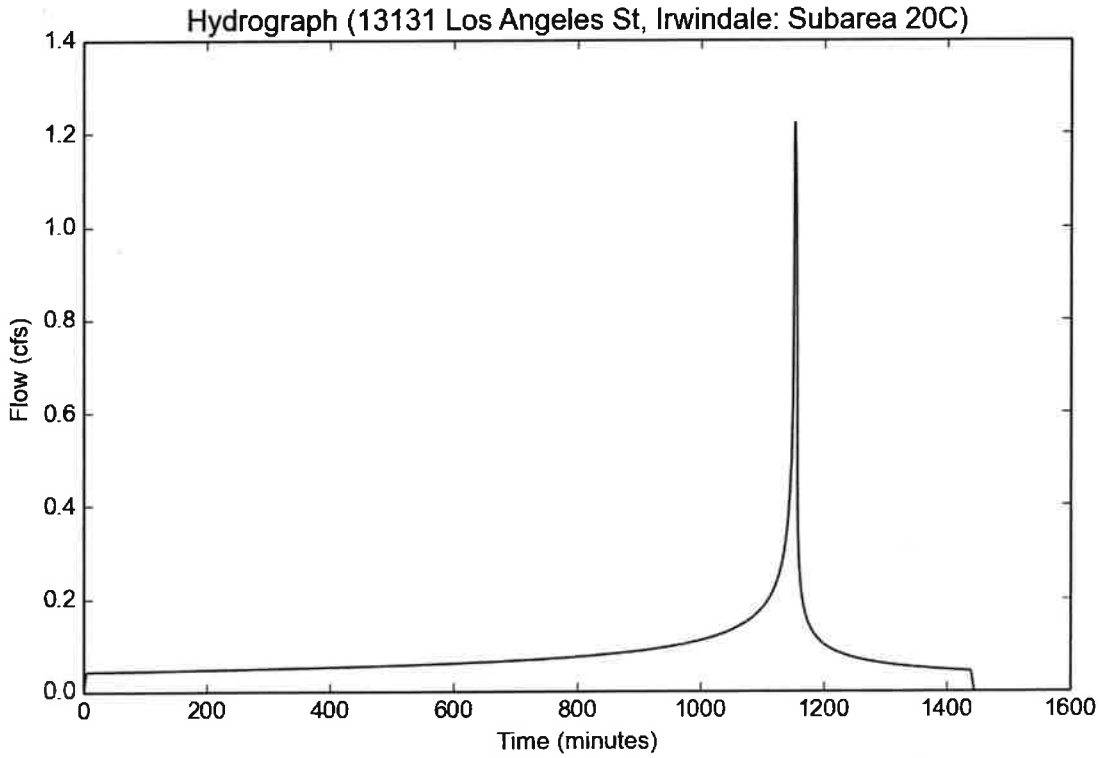
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subarea 20C.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subarea 20C
Area (ac)	0.35
Flow Path Length (ft)	195.0
Flow Path Slope (vft/hft) = (351.92-345.94)/195 =	0.036
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	7
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.9377
Undeveloped Runoff Coefficient (Cu)	0.7407
Developed Runoff Coefficient (Cd)	0.8857
Time of Concentration (min)	5.0
Clear Peak Flow Rate (cfs)	1.2206
Burned Peak Flow Rate (cfs)	1.2206
24-Hr Clear Runoff Volume (ac-ft)	0.159
24-Hr Clear Runoff Volume (cu-ft)	6925.5943



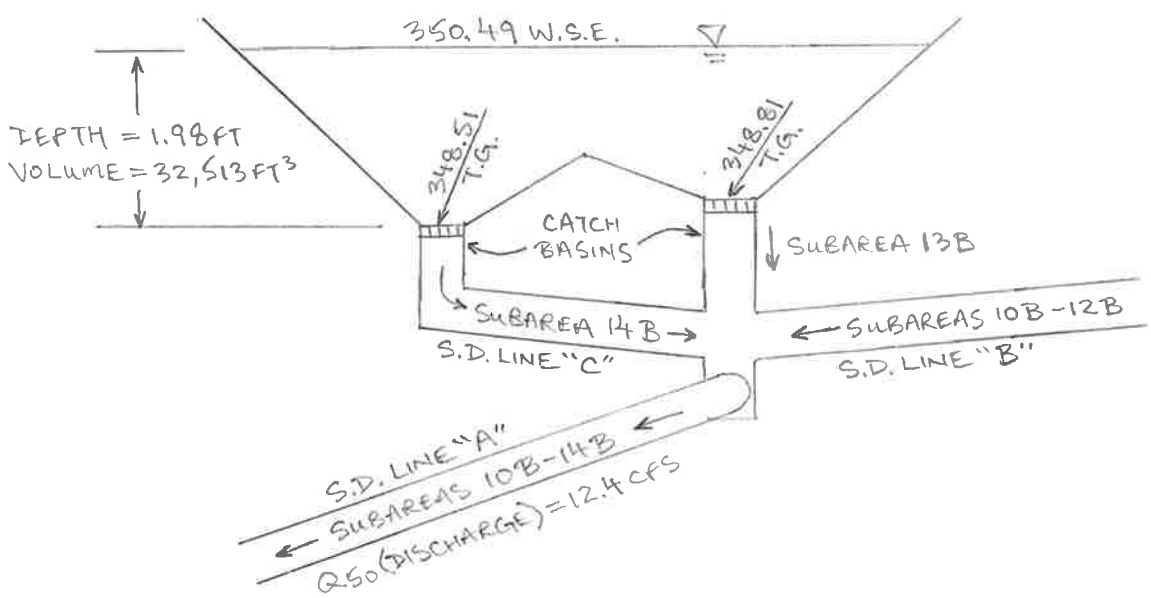
APPENDIX C

DETENTION ANALYSIS

Job #3665 - 13131 Los Angeles St, Irwindale
Volume in Westerly Truck Yard

Elevation	Depth (feet)	Area (sq. ft.)	Volume (c.f.)	Σ Volume (c.f.)	Σ Volume (ac-ft)
348.51	0.00	0			
			64	64	0.00
348.80	0.29	440			
			209	273	0.01
349.00	0.49	1650			
			598	871	0.02
349.20	0.69	4330			
			1321	2192	0.05
349.40	0.89	8880			
			2384	4576	0.11
349.60	1.09	14960			
			3684	8260	0.19
349.80	1.29	21880			
			5109	13369	0.31
350.00	1.49	29210			
			6618	19987	0.46
350.20	1.69	36970			
			8187	28174	0.65
350.40	1.89	44900			
			4697	32871	0.75 ← 32,513 FT³ ≈ 350.49 W.S.E. 1.98 FT DEPTH
350.50	1.99	49040			

TRUCK YARD IN SUBAREAS 13B AND 14B



Peak Flow Hydrologic Analysis

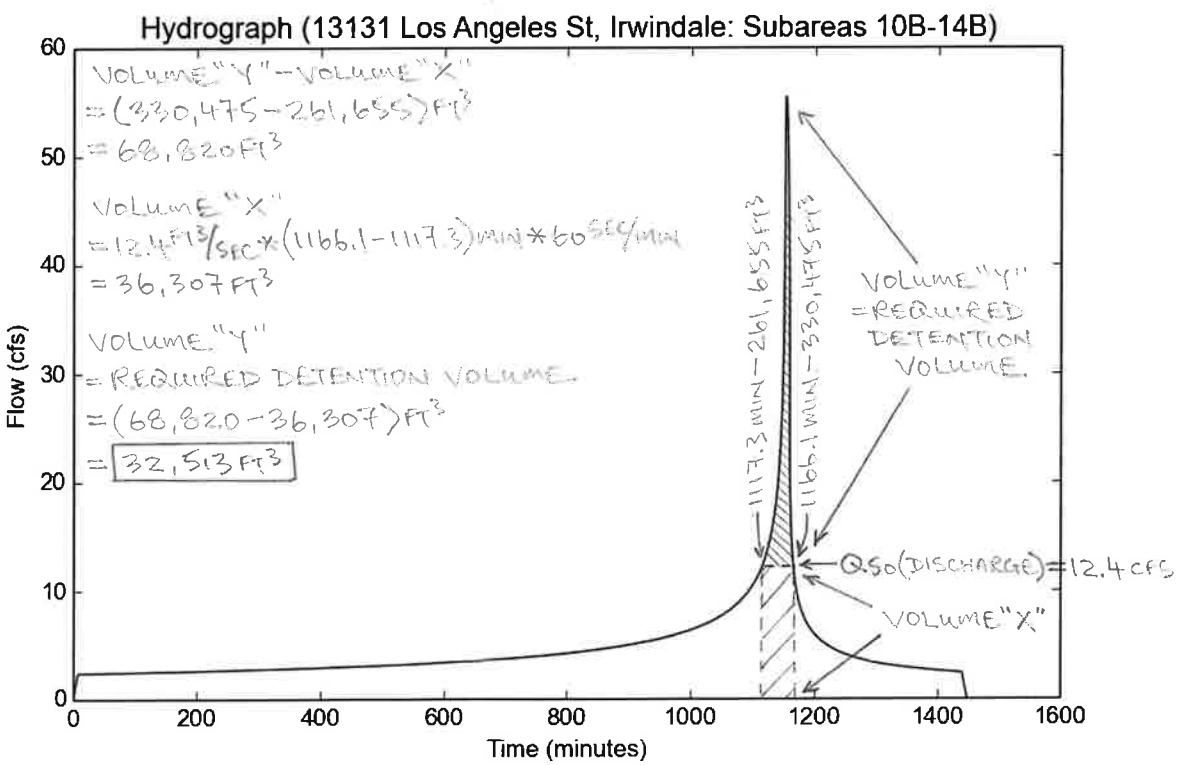
File location: O:/3600-3699/3665/HydroCalc/HydroCalc-2019-11-22/3665 Proposed Subareas 10B-14B.pdf
Version: HydroCalc 1.0.3

Input Parameters

Project Name	13131 Los Angeles St, Irwindale
Subarea ID	Subareas 10B-14B
Area (ac)	19.5
Flow Path Length (ft)	665.0
Flow Path Slope (vft/hft) = (354.63-348.81)/665 =	0.009
50-yr Rainfall Depth (in)	6.6
Percent Impervious	0.91
Soil Type	8
Design Storm Frequency	50-yr
Fire Factor	0
LID	False

Output Results

Modeled (50-yr) Rainfall Depth (in)	6.6
Peak Intensity (in/hr)	3.1573
Undeveloped Runoff Coefficient (Cu)	0.9
Developed Runoff Coefficient (Cd)	0.9
Time of Concentration (min)	8.0
Clear Peak Flow Rate (cfs)	55.41
Burned Peak Flow Rate (cfs)	55.41
24-Hr Clear Runoff Volume (ac-ft)	9.0832
24-Hr Clear Runoff Volume (cu-ft)	395665.3375



SUBAREAS 10B-14B HYDROGRAPH

TIME (MIN.)						Q50 (CFS)		VOLUME (FT3)	
1111.6	0.664512	4.385776	0.673951	0.706005	0.88254	11.59839	139.0291	257556	
1111.8	0.664867	4.388125	0.675388	0.706595	0.882594	11.62382	139.3332	257695.3	
1112	0.665224	4.39048	0.676835	0.707188	0.882647	11.64943	139.6395	257835	
1112.2	0.665582	4.39284	0.678292	0.707785	0.882701	11.67521	139.9479	257974.9	
1112.4	0.66594	4.395205	0.679759	0.708386	0.882755	11.70118	140.2583	258115.2	
1112.6	0.666299	4.397576	0.681235	0.708991	0.882809	11.72732	140.571	258255.7	
1112.8	0.66666	4.399953	0.682722	0.709601	0.882864	11.75364	140.8858	258396.6	
1113	0.667021	4.402336	0.684219	0.710214	0.882919	11.78015	141.2027	258537.8	
1113.2	0.667382	4.404724	0.685726	0.710832	0.882975	11.80684	141.522	258679.4	
1113.4	0.667745	4.407118	0.687244	0.711454	0.883031	11.83373	141.8434	258821.2	
1113.6	0.668109	4.409518	0.688773	0.712081	0.883087	11.8608	142.1672	258963.4	
1113.8	0.668473	4.411924	0.690312	0.712712	0.883144	11.88807	142.4932	259105.9	
1114	0.668839	4.414336	0.691862	0.713347	0.883201	11.91553	142.8216	259248.7	
1114.2	0.669205	4.416754	0.693422	0.713987	0.883259	11.94319	143.1524	259391.8	
1114.4	0.669572	4.419177	0.694994	0.714631	0.883317	11.97106	143.4855	259535.3	
1114.6	0.66994	4.421607	0.696578	0.71528	0.883375	11.99912	143.821	259679.1	
1114.8	0.67031	4.424043	0.698172	0.715934	0.883434	12.02739	144.159	259823.3	
1115	0.67068	4.426485	0.699778	0.716592	0.883493	12.05586	144.4995	259967.8	
1115.2	0.671051	4.428934	0.701396	0.717255	0.883553	12.08455	144.8425	260112.6	
1115.4	0.671422	4.431388	0.703026	0.717923	0.883613	12.11345	145.188	260257.8	
1115.6	0.671795	4.433849	0.704667	0.718596	0.883674	12.14257	145.5361	260403.4	
1115.8	0.672169	4.436316	0.706321	0.719274	0.883735	12.1719	145.8868	260549.3	
1116	0.672544	4.43879	0.707987	0.719957	0.883796	12.20146	146.2402	260695.5	
1116.2	0.67292	4.44127	0.709665	0.720645	0.883858	12.23124	146.5962	260842.1	
1116.4	0.673296	4.443757	0.711355	0.721338	0.88392	12.26124	146.9549	260989	
1116.6	0.673674	4.44625	0.713059	0.722036	0.883983	12.29148	147.3163	261136.4	
1116.8	0.674053	4.44875	0.714775	0.72274	0.884047	12.32195	147.6805	261284	
1117	0.674433	4.451256	0.716505	0.723449	0.88411	12.35265	148.0476	261432.1	
1117.2	0.674814	4.45377	0.718247	0.724163	0.884175	12.38359	148.4174	261580.5	2.4 CFS
1117.3 MIN → 1117.4	0.675195	4.45629	0.720003	0.724883	0.884239	12.41478	148.7902	261729.3	261,655 FT3
1117.6	0.675578	4.458817	0.721773	0.725608	0.884305	12.4462	149.1659	261878.5	
1117.8	0.675962	4.461351	0.723556	0.726339	0.884371	12.47788	149.5445	262028	
1118	0.676347	4.463891	0.725353	0.727076	0.884437	12.50981	149.9262	262177.9	
1118.2	0.676733	4.466439	0.727164	0.727818	0.884504	12.542	150.3108	262328.2	
1118.4	0.67712	4.468994	0.72899	0.728566	0.884571	12.57444	150.6986	262478.9	
1118.6	0.677509	4.471556	0.730829	0.729321	0.884639	12.60714	151.0895	262630	
1118.8	0.677898	4.474126	0.732684	0.730081	0.884707	12.64011	151.4835	262781.5	
1119	0.678288	4.476702	0.734554	0.730847	0.884776	12.67335	151.8808	262933.4	
1119.2	0.67868	4.479286	0.736438	0.73162	0.884846	12.70686	152.2813	263085.7	
1119.4	0.679072	4.481878	0.738338	0.732398	0.884916	12.74065	152.6851	263238.4	
1119.6	0.679466	4.484477	0.740253	0.733183	0.884986	12.77472	153.0922	263391.5	
1119.8	0.679861	4.487083	0.742184	0.733975	0.885058	12.80908	153.5028	263545	
1120	0.680257	4.489697	0.744131	0.734773	0.88513	12.84372	153.9168	263698.9	
1120.2	0.680654	4.492319	0.746094	0.735577	0.885202	12.87865	154.3342	263853.2	
1120.4	0.681053	4.494948	0.748073	0.736389	0.885275	12.91388	154.7552	264008	
1120.6	0.681452	4.497586	0.750069	0.737207	0.885349	12.94942	155.1798	264163.1	
1120.8	0.681853	4.500231	0.752082	0.738032	0.885423	12.98525	155.608	264318.8	

1121	0.682255	4.502884	0.754112	0.738864	0.885498	13.0214	156.0399	264474.8
1121.2	0.682658	4.505545	0.756159	0.739703	0.885573	13.05786	156.4756	264631.3
1121.4	0.683063	4.508215	0.758223	0.74055	0.885649	13.09464	156.915	264788.2
1121.6	0.683469	4.510892	0.760306	0.741403	0.885726	13.13175	157.3583	264945.5
1121.8	0.683876	4.513578	0.762406	0.742264	0.885804	13.16918	157.8056	265103.3
1122	0.684284	4.516273	0.764525	0.743133	0.885882	13.20694	158.2567	265261.6
1122.2	0.684693	4.518975	0.766663	0.744009	0.885961	13.24505	158.712	265420.3
1122.4	0.685104	4.521687	0.768819	0.744893	0.88604	13.2835	159.1713	265579.5
1122.6	0.685516	4.524407	0.770995	0.745785	0.886121	13.32229	159.6347	265739.1
1122.8	0.68593	4.527135	0.77319	0.746684	0.886202	13.36144	160.1024	265899.2
1123	0.686344	4.529873	0.775405	0.747592	0.886283	13.40095	160.5744	266059.8
1123.2	0.68676	4.532619	0.77764	0.748508	0.886366	13.44083	161.0507	266220.8
1123.4	0.687178	4.535374	0.779895	0.749433	0.886449	13.48107	161.5314	266382.4
1123.6	0.687597	4.538139	0.782171	0.750366	0.886533	13.52169	162.0166	266544.4
1123.8	0.688017	4.540912	0.784468	0.751307	0.886618	13.5627	162.5064	266706.9
1124	0.688439	4.543695	0.786786	0.752258	0.886703	13.60409	163.0008	266869.9
1124.2	0.688862	4.546487	0.789126	0.753217	0.88679	13.64588	163.4998	267033.4
1124.4	0.689286	4.549289	0.791488	0.754185	0.886877	13.68807	164.0037	267197.4
1124.6	0.689712	4.5521	0.793873	0.755162	0.886965	13.73067	164.5124	267361.9
1124.8	0.690139	4.55492	0.79628	0.756149	0.887053	13.77368	165.0261	267526.9
1125	0.690568	4.557751	0.79871	0.757145	0.887143	13.81711	165.5448	267692.5
1125.2	0.690999	4.560592	0.801164	0.757933	0.887214	13.86067	166.0667	267858.6
1125.4	0.691431	4.563442	0.803641	0.758485	0.887264	13.90431	166.5899	268025.1
1125.6	0.691864	4.566302	0.806143	0.759043	0.887314	13.94839	167.1162	268192.3
1125.8	0.692299	4.569173	0.808669	0.759605	0.887364	13.9929	167.6477	268359.9
1126	0.692735	4.572054	0.811221	0.760174	0.887416	14.03786	168.1846	268528.1
1126.2	0.693174	4.574946	0.813798	0.760748	0.887467	14.08327	168.7268	268696.8
1126.4	0.693613	4.577848	0.816401	0.761328	0.887519	14.12915	169.2746	268866.1
1126.6	0.694055	4.58076	0.819031	0.761913	0.887572	14.1755	169.8279	269035.9
1126.8	0.694498	4.583684	0.821687	0.762505	0.887625	14.22233	170.387	269206.3
1127	0.694942	4.586618	0.82437	0.763103	0.887679	14.26964	170.9518	269377.3
1127.2	0.695388	4.589564	0.827082	0.763707	0.887734	14.31745	171.5225	269548.8
1127.4	0.695836	4.592521	0.829821	0.764317	0.887789	14.36576	172.0993	269720.9
1127.6	0.696286	4.595489	0.83259	0.764934	0.887844	14.41459	172.6821	269893.6
1127.8	0.696738	4.598468	0.835387	0.765557	0.8879	14.46394	173.2712	270066.8
1128	0.697191	4.601459	0.838215	0.766187	0.887957	14.51382	173.8666	270240.7
1128.2	0.697646	4.604462	0.841073	0.766823	0.888014	14.56425	174.4684	270415.2
1128.4	0.698102	4.607476	0.843961	0.767467	0.888072	14.61522	175.0768	270590.2
1128.6	0.698561	4.610503	0.846882	0.768117	0.888131	14.66676	175.6919	270765.9
1128.8	0.699022	4.613542	0.849834	0.768775	0.88819	14.71887	176.3138	270942.3
1129	0.699484	4.616593	0.852819	0.76944	0.88825	14.77157	176.9426	271119.2
1129.2	0.699948	4.619657	0.855837	0.770112	0.88831	14.82485	177.5785	271296.8
1129.4	0.700414	4.622733	0.85889	0.770792	0.888371	14.87875	178.2216	271475
1129.6	0.700882	4.625823	0.861976	0.77148	0.888433	14.93326	178.8721	271653.9
1129.8	0.701352	4.628925	0.865098	0.772175	0.888496	14.98841	179.53	271833.4
1130	0.701824	4.63204	0.868256	0.772878	0.888559	15.04419	180.1956	272013.6
1130.2	0.702298	4.635169	0.871451	0.77359	0.888623	15.10063	180.8689	272194.5

1130.4	0.702774	4.638311	0.874683	0.77431	0.888688	15.15774	181.5502	272376
1130.6	0.703253	4.641467	0.877953	0.775038	0.888753	15.21553	182.2396	272558.3
1130.8	0.703733	4.644637	0.881262	0.775775	0.88882	15.27402	182.9373	272741.2
1131	0.704215	4.647821	0.88461	0.776521	0.888887	15.33321	183.6434	272924.8
1131.2	0.7047	4.651019	0.887999	0.777276	0.888955	15.39313	184.3581	273109.2
1131.4	0.705187	4.654231	0.89143	0.77804	0.889024	15.45379	185.0815	273294.3
1131.6	0.705676	4.657459	0.894902	0.778814	0.889093	15.5152	185.814	273480.1
1131.8	0.706167	4.660701	0.898418	0.779597	0.889164	15.57739	186.5556	273666.6
1132	0.70666	4.663958	0.901977	0.78039	0.889235	15.64036	187.3065	273854
1132.2	0.707156	4.667231	0.905582	0.781193	0.889307	15.70414	188.067	274042
1132.4	0.707654	4.670519	0.909232	0.782006	0.889381	15.76874	188.8373	274230.9
1132.6	0.708155	4.673824	0.912929	0.782829	0.889455	15.83418	189.6175	274420.5
1132.8	0.708658	4.677144	0.916674	0.783664	0.88953	15.90048	190.408	274610.9
1133	0.709164	4.68048	0.920469	0.784509	0.889606	15.96766	191.2088	274802.1
1133.2	0.709672	4.683833	0.924313	0.785365	0.889683	16.03573	192.0203	274994.1
1133.4	0.710182	4.687203	0.928208	0.786233	0.889761	16.10473	192.8427	275187
1133.6	0.710695	4.69059	0.932156	0.787112	0.88984	16.17466	193.6763	275380.6
1133.8	0.711211	4.693994	0.936157	0.788004	0.88992	16.24555	194.5213	275575.1
1134	0.71173	4.697416	0.940213	0.788907	0.890002	16.31743	195.3779	275770.5
1134.2	0.712251	4.700856	0.944326	0.789823	0.890084	16.39032	196.2465	275966.8
1134.4	0.712775	4.704314	0.948495	0.790752	0.890168	16.46424	197.1273	276163.9
1134.6	0.713302	4.70779	0.952724	0.791694	0.890252	16.53921	198.0207	276361.9
1134.8	0.713831	4.711286	0.957013	0.792649	0.890338	16.61527	198.9269	276560.8
1135	0.714364	4.7148	0.961363	0.793618	0.890426	16.69244	199.8462	276760.7
1135.2	0.714899	4.718334	0.965777	0.794601	0.890514	16.77074	200.7791	276961.5
1135.4	0.715438	4.721888	0.970255	0.795599	0.890604	16.85021	201.7257	277163.2
1135.6	0.715979	4.725462	0.974801	0.796611	0.890695	16.93087	202.6865	277365.9
1135.8	0.716524	4.729056	0.979414	0.797639	0.890788	17.01277	203.6618	277569.5
1136	0.717072	4.732672	0.984097	0.798682	0.890881	17.09591	204.6521	277774.2
1136.2	0.717623	4.736309	0.988852	0.799741	0.890977	17.18036	205.6576	277979.9
1136.4	0.718177	4.739967	0.99368	0.800817	0.891074	17.26612	206.6789	278186.5
1136.6	0.718735	4.743648	0.998584	0.801909	0.891172	17.35325	207.7162	278394.3
1136.8	0.719296	4.747351	1.003566	0.802675	0.891241	17.44117	208.7665	278603
1137	0.71986	4.751077	1.008628	0.803315	0.891298	17.53027	209.8286	278812.8
1137.2	0.720428	4.754826	1.013771	0.803964	0.891357	17.62082	210.9065	279023.8
1137.4	0.721	4.7586	1.018999	0.804625	0.891416	17.71287	212.0021	279235.8
1137.6	0.721575	4.762398	1.024313	0.805296	0.891477	17.80645	213.1159	279448.9
1137.8	0.722155	4.76622	1.029717	0.805979	0.891538	17.90162	214.2484	279663.1
1138	0.722738	4.770068	1.035212	0.806673	0.891601	17.99841	215.4002	279878.5
1138.2	0.723325	4.773942	1.040801	0.807379	0.891664	18.09688	216.5718	280095.1
1138.4	0.723916	4.777843	1.046488	0.808098	0.891729	18.19708	217.7638	280312.9
1138.6	0.724511	4.78177	1.052275	0.808829	0.891795	18.29906	218.9768	280531.8
1138.8	0.72511	4.785725	1.058165	0.809573	0.891862	18.40287	220.2116	280752
1139	0.725713	4.789709	1.064162	0.810331	0.89193	18.50857	221.4686	280973.5
1139.2	0.726321	4.793721	1.070268	0.811102	0.891999	18.61622	222.7487	281196.3
1139.4	0.726934	4.797763	1.076487	0.811888	0.89207	18.72588	224.0526	281420.3
1139.6	0.727551	4.801835	1.082823	0.812688	0.892142	18.83762	225.381	281645.7

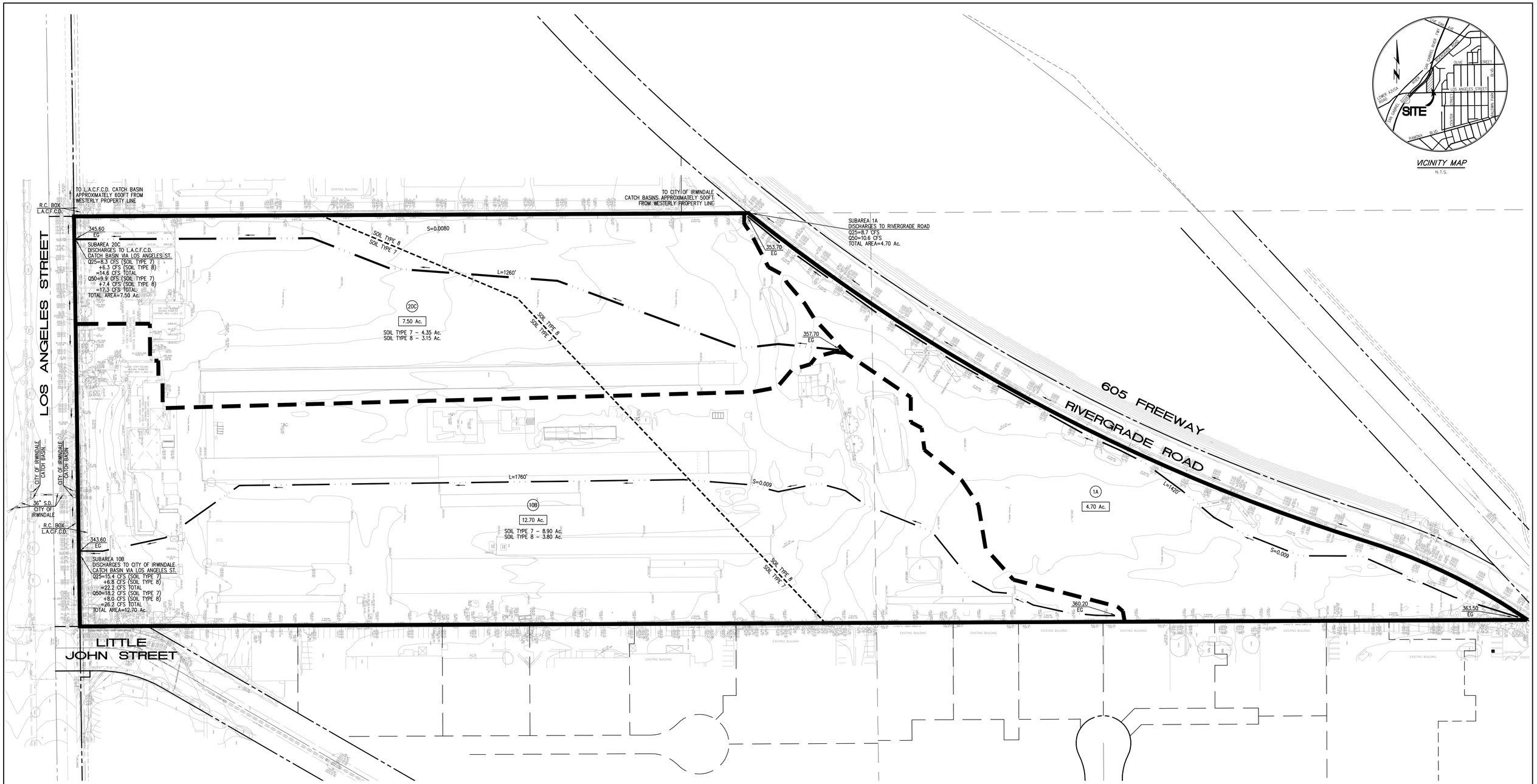
1139.8	0.728172	4.805938	1.08928	0.813504	0.892215	18.95151	226.7348	281872.4
1140	0.728799	4.810073	1.095861	0.814335	0.89229	19.06761	228.1147	282100.5
1140.2	0.72943	4.814241	1.102571	0.815183	0.892366	19.186	229.5217	282330.1
1140.4	0.730067	4.818441	1.109414	0.816048	0.892444	19.30677	230.9566	282561
1140.6	0.730709	4.822676	1.116395	0.81693	0.892524	19.42998	232.4205	282793.4
1140.8	0.731356	4.826946	1.123519	0.81783	0.892605	19.55574	233.9143	283027.4
1141	0.732008	4.831252	1.130791	0.818748	0.892687	19.68413	235.4392	283262.8
1141.2	0.732666	4.835595	1.138215	0.819686	0.892772	19.81524	236.9962	283499.8
1141.4	0.73333	4.839976	1.145798	0.820644	0.892858	19.94919	238.5866	283738.4
1141.6	0.733999	4.844396	1.153546	0.821623	0.892946	20.08606	240.2115	283978.6
1141.8	0.734675	4.848856	1.161465	0.822624	0.893036	20.22599	241.8723	284220.5
1142	0.735357	4.853358	1.169561	0.823646	0.893128	20.36908	243.5704	284464
1142.2	0.736046	4.857901	1.177842	0.824693	0.893222	20.51546	245.3072	284709.3
1142.4	0.736741	4.862489	1.186314	0.825763	0.893319	20.66526	247.0843	284956.4
1142.6	0.737443	4.867122	1.194987	0.826859	0.893417	20.81863	248.9033	285205.3
1142.8	0.738152	4.871801	1.203867	0.82798	0.893518	20.97571	250.766	285456.1
1143	0.738868	4.876529	1.212964	0.82913	0.893622	21.13666	252.6742	285708.8
1143.2	0.739592	4.881306	1.222287	0.830308	0.893728	21.30165	254.6298	285963.4
1143.4	0.740323	4.886134	1.231847	0.831515	0.893836	21.47085	256.635	286220
1143.6	0.741063	4.891016	1.241653	0.832754	0.893948	21.64447	258.6919	286478.7
1143.8	0.741811	4.895952	1.251717	0.834026	0.894062	21.8227	260.803	286739.5
1144	0.742567	4.900945	1.262051	0.835331	0.89418	22.00575	262.9707	287002.5
1144.2	0.743333	4.905998	1.272667	0.836672	0.894301	22.19387	265.1977	287267.7
1144.4	0.744108	4.911111	1.283581	0.838051	0.894425	22.3873	267.487	287535.2
1144.6	0.744892	4.916289	1.294806	0.839469	0.894552	22.5863	269.8416	287805
1144.8	0.745687	4.921532	1.306359	0.840929	0.894684	22.79117	272.2648	288077.3
1145	0.746492	4.926844	1.318256	0.842432	0.894819	23.0022	274.7602	288352.1
1145.2	0.747307	4.932229	1.330516	0.843981	0.894958	23.21975	277.3317	288629.4
1145.4	0.748135	4.937688	1.343159	0.845578	0.895102	23.44416	279.9835	288909.4
1145.6	0.748974	4.943225	1.356207	0.847227	0.89525	23.67583	282.7199	289192.1
1145.8	0.749825	4.948845	1.369683	0.848929	0.895404	23.91517	285.546	289477.6
1146	0.750689	4.95455	1.383612	0.850689	0.895562	24.16266	288.467	289766.1
1146.2	0.751567	4.960345	1.398023	0.852509	0.895726	24.41879	291.4887	290057.6
1146.4	0.75246	4.966236	1.412946	0.854395	0.895896	24.68411	294.6174	290352.2
1146.6	0.753367	4.972225	1.428413	0.856349	0.896071	24.95923	297.86	290650.1
1146.8	0.754291	4.97832	1.444463	0.858376	0.896254	25.24481	301.2242	290951.3
1147	0.755231	4.984527	1.461134	0.860483	0.896443	25.54157	304.7183	291256
1147.2	0.75619	4.990851	1.478473	0.862673	0.896641	25.85034	308.3515	291564.4
1147.4	0.757167	4.9973	1.496527	0.864954	0.896846	26.17201	312.1341	291876.5
1147.6	0.758164	5.003882	1.515354	0.866421	0.896978	26.50517	316.0631	292192.6
1147.8	0.759183	5.010607	1.535015	0.867739	0.897096	26.85261	320.1466	292512.7
1148	0.760225	5.017484	1.55558	0.869116	0.89722	27.21612	324.4123	292837.1
1148.2	0.761292	5.024524	1.577128	0.87056	0.89735	27.59711	328.8794	293166
1148.4	0.762385	5.031741	1.599749	0.872076	0.897487	27.9972	333.5659	293499.6
1148.6	0.763507	5.039149	1.623547	0.87367	0.89763	28.41823	338.4926	293838.1
1148.8	0.764661	5.046765	1.648641	0.875351	0.897782	28.86232	343.6833	294181.7
1149	0.76585	5.054608	1.675168	0.877128	0.897942	29.33196	349.1657	294530.9

1149.2	0.767076	5.062701	1.703293	0.879013	0.898111	29.83005	354.9721	294885.9
1149.4	0.768344	5.07107	1.733207	0.881017	0.898292	30.36004	361.1405	295247
1149.6	0.769659	5.079748	1.765142	0.883156	0.898484	30.92607	367.7166	295614.7
1149.8	0.771026	5.088773	1.79938	0.88545	0.898691	31.53317	374.7554	295989.5
1150	0.772454	5.098193	1.836268	0.887922	0.898913	32.18758	382.3245	296371.8
1150.2	0.77395	5.108067	1.876244	0.8906	0.899154	32.89713	390.5083	296762.3
1150.4	0.775526	5.118472	1.919872	0.893523	0.899417	33.67194	399.4144	297161.7
1150.6	0.777198	5.129509	1.9679	0.89674	0.899707	34.52538	409.1839	297570.9
1150.8	0.778987	5.141315	2.021351	0.899638	0.899967	35.47343	419.9929	297990.9
1151	0.780923	5.154089	2.081701	0.9	0.9	36.53386	432.0437	298423
1151.2	0.78305	5.168133	2.151204	0.9	0.9	37.75364	445.725	298868.7
1151.4	0.785447	5.183953	2.23364	0.9	0.9	39.20039	461.7242	299330.4
1151.6	0.788262	5.202526	2.336328	0.9	0.9	41.00255	481.2176	299811.6
1151.8	0.79187	5.226345	2.477947	0.9	0.9	43.48798	506.9432	300318.6
1152	0.8	5.28	2.84291	0.9	0.9	49.89307	560.2862	300878.9
1152.2	0.804237	5.307967	3.014768	0.9	0.9	52.90917	616.8134	301495.7
1152.4	0.806118	5.320382	3.06953	0.9	0.9	53.87025	640.6765	302136.3
1152.6	0.807585	5.330063	3.103307	0.9	0.9	54.46304	649.9998	302786.3
1152.8	0.808835	5.338309	3.125825	0.9	0.9	54.85823	655.9276	303442.3
1153	0.809944	5.345629	3.140884	0.9	0.9	55.12252	659.8845	304102.2
1153.2	0.810953	5.352287	3.15044	0.9	0.9	55.29022	662.4765	304764.6
1153.4	0.811885	5.358441	3.15565	0.9	0.9	55.38166	664.0313	305428.7
1153.6	0.812757	5.364194	3.157263	0.9	0.9	55.40997	664.7497	306093.4
1153.8	0.813578	5.369617	3.155792	0.9	0.9	55.38415	664.7647	306758.2
1154	0.814358	5.374764	3.151602	0.9	0.9	55.31062	664.1686	307422.3
1154.2	0.815102	5.379674	3.144961	0.9	0.9	55.19407	663.0281	308085.4
1154.4	0.815815	5.384378	3.136067	0.9	0.9	55.03797	661.3922	308746.8
1154.6	0.8165	5.388901	3.125067	0.9	0.9	54.84493	659.2974	309406.1
1154.8	0.817161	5.393263	3.112072	0.9	0.9	54.61687	656.7708	310062.8
1155	0.8178	5.397482	3.097162	0.9	0.9	54.3552	653.8324	310716.7
1155.2	0.81842	5.40157	3.080392	0.9	0.9	54.06087	650.4964	311367.2
1155.4	0.819021	5.405539	3.061795	0.9	0.9	53.7345	646.7722	312013.9
1155.6	0.819606	5.409401	3.041386	0.9	0.9	53.37633	642.6649	312656.6
1155.8	0.820176	5.413162	3.019164	0.9	0.9	52.98633	638.1759	313294.8
1156	0.820732	5.416832	2.995111	0.9	0.9	52.56419	633.3031	313928.1
1156.2	0.821275	5.420416	2.96919	0.9	0.9	52.10929	628.0409	314556.1
1156.4	0.821806	5.423922	2.941352	0.9	0.9	51.62072	622.3801	315178.5
1156.6	0.822326	5.427353	2.911524	0.9	0.9	51.09725	616.3078	315794.8
1156.8	0.822835	5.430714	2.879617	0.9	0.9	50.53729	609.8072	316404.6
1157	0.823335	5.43401	2.845517	0.9	0.9	49.93883	602.8567	317007.5
1157.2	0.823825	5.437245	2.809083	0.9	0.9	49.2994	595.4294	317602.9
1157.4	0.824306	5.440422	2.770139	0.9	0.9	48.61594	587.492	318190.4
1157.6	0.824779	5.443544	2.72847	0.9	0.9	47.88465	579.0035	318769.4
1157.8	0.825245	5.446614	2.683808	0.9	0.9	47.10082	569.9128	319339.3
1158	0.825702	5.449635	2.635815	0.9	0.9	46.25855	560.1562	319899.5
1158.2	0.826153	5.452609	2.584063	0.9	0.9	45.35031	549.6532	320449.1
1158.4	0.826597	5.455538	2.527995	0.9	0.9	44.36631	538.2997	320987.4

TIME (MIN)						Q.50 (CFS)		VOLUME (FT3)	
1158.6	0.827034	5.458424	2.466869	0.9	0.9	43.29355	525.9592	321513.4	
1158.8	0.827465	5.46127	2.399663	0.9	0.9	42.11409	512.4458	322025.8	
1159	0.82789	5.464076	2.324906	0.9	0.9	40.80209	497.4971	322523.3	
1159.2	0.82831	5.466845	2.240342	0.9	0.9	39.318	480.7206	323004	
1159.4	0.828724	5.469578	2.142191	0.9	0.9	37.59545	461.4807	323465.5	
1159.6	0.829133	5.472277	2.023132	0.8997	0.899973	35.5049	438.6021	323904.1	
1159.8	0.829537	5.474942	1.864479	0.889812	0.899083	32.68828	409.159	324313.3	
1160	0.829936	5.477576	1.481818	0.863096	0.896679	25.90993	351.5893	324664.9	
1160.2	0.83033	5.480178	1.291588	0.839063	0.894516	22.52923	290.635	324955.5	
1160.4	0.83072	5.482751	1.217771	0.829737	0.893676	21.22171	262.5057	325218	
1160.6	0.831105	5.485296	1.164247	0.822975	0.893068	20.27515	248.9812	325467	
1160.8	0.831487	5.487813	1.121278	0.817547	0.892579	19.51618	238.748	325705.7	
1161	0.831864	5.490303	1.085051	0.81297	0.892167	18.87692	230.3586	325936.1	
1161.2	0.832237	5.492767	1.053595	0.808996	0.89181	18.32232	223.1954	326159.3	
1161.4	0.832607	5.495206	1.025734	0.805476	0.891493	17.83147	216.9227	326376.2	
1161.6	0.832973	5.49762	1.000701	0.802313	0.891208	17.39074	211.3333	326587.6	
1161.8	0.833335	5.500012	0.97796	0.797315	0.890758	16.98696	206.2662	326793.8	
1162	0.833694	5.50238	0.957123	0.792674	0.890341	16.61723	201.6252	326995.4	
1162.2	0.834049	5.504726	0.937896	0.788391	0.889955	16.27637	197.3616	327192.8	
1162.4	0.834402	5.507051	0.92005	0.784416	0.889597	15.96025	193.4197	327386.2	
1162.6	0.834751	5.509355	0.903404	0.780708	0.889264	15.66561	189.7552	327576	
1162.8	0.835097	5.511638	0.887812	0.777235	0.888951	15.38982	186.3326	327762.3	
1163	0.83544	5.513902	0.873153	0.773969	0.888657	15.1307	183.1231	327945.4	
1163.2	0.83578	5.516146	0.859326	0.770889	0.88838	14.88645	180.1029	328125.5	
1163.4	0.836117	5.518372	0.846246	0.767976	0.888118	14.65554	177.252	328302.8	
1163.6	0.836451	5.52058	0.833842	0.765213	0.887869	14.43668	174.5533	328477.3	
1163.8	0.836783	5.522769	0.822051	0.762586	0.887633	14.22875	171.9926	328649.3	
1164	0.837112	5.524941	0.810819	0.760084	0.887408	14.03078	169.5572	328818.9	
1164.2	0.837439	5.527097	0.8001	0.757697	0.887193	13.84194	167.2364	328986.1	
1164.4	0.837763	5.529235	0.789852	0.753515	0.886816	13.65885	165.0048	329151.1	
1164.6	0.838085	5.531358	0.780039	0.749492	0.886454	13.48365	162.855	329314	
1164.8	0.838404	5.533465	0.770629	0.745635	0.886107	13.31576	160.7965	329474.8	
1165	0.838721	5.535556	0.761591	0.74193	0.885774	13.15465	158.8225	329633.6	
1165.2	0.839035	5.537632	0.752902	0.738368	0.885453	12.99985	156.927	329790.5	
1165.4	0.839348	5.539694	0.744536	0.734939	0.885145	12.85093	155.1047	329945.6	
1165.6	0.839658	5.541741	0.736474	0.731634	0.884847	12.7075	153.3506	330099	
1165.8	0.839966	5.543774	0.728696	0.728446	0.88456	12.56922	151.6603	330250.7	
1166	0.840272	5.545793	0.721184	0.725367	0.884283	12.43575	150.0298	330400.7	12.4 CFS
1166.1 MIN. 1166.2	0.840576	5.547799	0.713924	0.722391	0.884015	12.30683	148.4555	330549.1	330,475 FT3
1166.4	0.840877	5.549791	0.7069	0.719511	0.883756	12.18217	146.934	330696.1	
1166.6	0.841177	5.551771	0.700099	0.716724	0.883505	12.06155	145.4623	330841.5	
1166.8	0.841475	5.553738	0.693509	0.714022	0.883262	11.94472	144.0376	330985.6	
1167	0.841772	5.555692	0.687118	0.711403	0.883026	11.8315	142.6573	331128.2	
1167.2	0.842066	5.557634	0.680917	0.708861	0.882797	11.72168	141.3191	331269.5	
1167.4	0.842358	5.559564	0.674896	0.706393	0.882575	11.6151	140.0207	331409.6	
1167.6	0.842649	5.561483	0.669045	0.703994	0.882359	11.51159	138.7601	331548.3	

APPENDIX D

HYDROLOGY MAP



SUBAREA DATA SUMMARY

SUBAREA	AREA (ACRES)	LENGTH (FEET)	SLOPE	Tc25 (MINUTES)	Q25 (CFS)	Tc50 (MINUTES)	Q50 (CFS)
1A	4.70	1420	0.007	15.0	8.7	13.0	10.6
10B	12.70	1760	0.009	16.0	22.2	15.0	26.2
20C	7.50	1260	0.010	13.0	14.6	12.0	17.3

LEGEND

- PROJECT BOUNDARY
- SUBAREA BOUNDARY
- FLOW PATH
- FLOW ARROW
- 1.00 AC. — SUBAREA AREA
- 1A — SUBAREA NUMBER

0 30 60 120 180

SCALE: 1"=60'

Last Update:11/26/19
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CITY OF IRWINDALE
PUBLIC WORKS DEPARTMENT

EXISTING CONDITION HYDROLOGY MAP

DUKE WAREHOUSE AT 13131 LOS ANGELES STREET

PREPARED FOR:

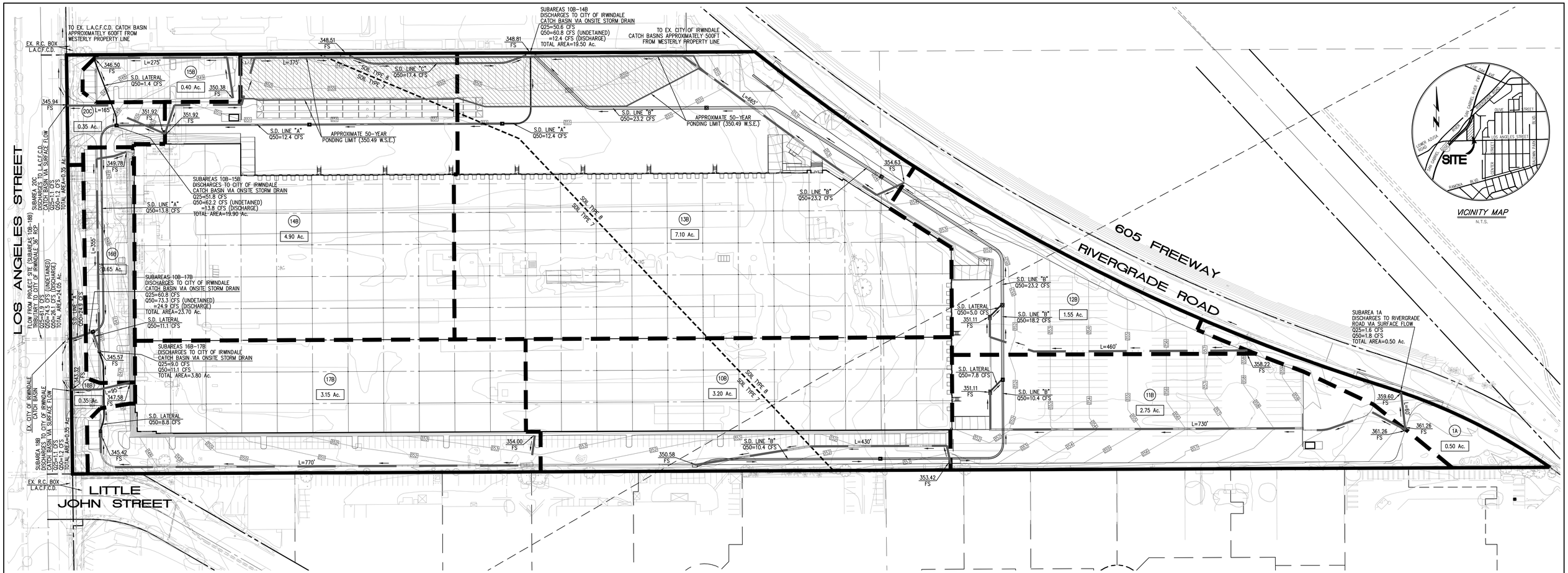
DUKE REALTY 13131 LA STREET, LP
200 SPECTRUM CENTER, DRIVE STE 1600
IRVINE, CA 92618
PHONE: (949) 797-7038

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

Designed by
Date
Checked by
Date
Designed by
Date
Checked by
Date

Approved by Date
Public Works Director R.C.E. XXXXX
Sheet 1 of 1 Sheets

3665/1 OF 1 SHEET



SUBAREA DATA SUMMARY

SUBAREA	AREA (ACRES)	LENGTH (FEET)	SLOPE	Tc25 (MINUTES)	Q25 (CFS)	Tc50 (MINUTES)	Q50 (CFS)
1A	0.50	60	0.028	5.0	1.6	5.0	1.8
10B	3.20	430	0.007	7.0	8.5	6.0	10.4
11B	2.75	730	0.014	8.0	6.9	8.0	7.8
12B	1.55	460	0.015	6.0	4.4	6.0	5.0
13B	7.10	665	0.009	9.0	16.8	8.0	20.2
14B	4.90	375	0.009	6.0	14.0	5.0	17.4
15B	0.40	275	0.014	5.0	1.2	5.0	1.4
16B	0.65	355	0.012	6.0	1.8	5.0	2.3
17B	3.15	770	0.011	9.0	7.2	8.0	8.8
18B	0.35	95	0.045	5.0	1.1	5.0	1.2
20C	0.35	195	0.036	5.0	1.1	5.0	1.2

LEGEND

- PROJECT BOUNDARY
- SUBAREA BOUNDARY
- FLOW PATH
- FLOW ARROW
- 1.00 AC. — SUBAREA AREA
- 1A — SUBAREA NUMBER
- APPROXIMATE 50-YEAR PONDING LIMIT

0 30 60 120 180

SCALE: 1"=60'

Last Update:11/26/19
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CITY OF IRWINDALE

PUBLIC WORKS DEPARTMENT

PROPOSED CONDITION HYDROLOGY MAP

DUKE WAREHOUSE AT 13131 LOS ANGELES STREET

PREPARED FOR:

DUKE REALTY 13131 LA STREET, LP
200 SPECTRUM CENTER, DRIVE STE 1600
IRVINE, CA 92618
PHONE: (949) 797-7038

Thienes Engineering, Inc.
CIVIL ENGINEERING • LAND SURVEYING
14349 FIRESTONE BOULEVARD
LA MIRADA, CALIFORNIA 90638
PH.(714)521-4811 FAX(714)521-4173

Designed by _____ Date _____
Checked by _____ Date _____
Designed by _____ Date _____
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Approved by _____ Date _____

Public Works Director _____ R.C.E. XXXXX

Sheet 1 of 1 Sheets

3665/1 OF 1 SHEET

APPENDIX I

Noise Impact Assessment

13131 Los Angeles Street Industrial Project

Noise Impact Assessment

Irwindale, California

Prepared For:
Community Development Department, Planning Division
5050 North Irwindale Avenue
Irwindale, CA
July 2019

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

ECORP Consulting, Inc. has assisted public and private land owners with environmental regulation compliance since 1987. We offer full service capability, from initial baseline environmental studies through environmental planning review, permitting negotiation, liaison to obtain legal agreements, mitigation design, construction monitoring, and compliance reporting.

ECORP Consulting, Inc. 55 Hanover Lane, Suite A Chico, CA 95928

● Phone: (530) 965-5925 *● Web: www.ecorpconsulting.com*

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ATTACHMENTS

Attachment A – Existing Baseline Noise Measurements – Project Site Vicinity

Attachment B – Traffic Noise Measurements

Attachment C- SoundPLAN Output Files

1.0 INTRODUCTION

This report documents the results of a Noise Impact Assessment completed for the 13131 Los Angeles Street Industrial Project (Project), which includes the construction of a stand-alone concrete tilt-up, 528,710 square foot building in Irwindale, California. This assessment was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the City of Irwindale General Plan Noise Element and Municipal Code, the City of Baldwin Park Municipal Code, and the City of Arcadia General Plan. The purpose of this report is to estimate Project-generated noise levels and to determine the level of impact the Project would have on the environment.

1.1 Project Location and Description

The Project site is located in the City of Irwindale, located in central Los Angeles County (see **Figure 1**). The Project site is an approximate 24.88-acre lot located along Rivergrade Road and Los Angeles Street. The irregular shaped site is generally bound by Interstate 605 (I-605) to the north and west, industrial uses and residences located in the City of Baldwin Park to the east, and Los Angeles Street to the south (see **Figure 2**). The Project is proposing a 528,710 square foot concrete tilt-up building that would be used for industrial purposes (see **Figure 3**). The site has been previously developed as an industrial use and is currently occupied with multiple buildings proposed for demolition.

The Project site is designated by the City of Irwindale General Plan as "Industrial/Business Park". According to the General Plan, the Industrial/Business Park designation allows for office, manufacturing, and warehouse uses, including commercial manufacturing, light manufacturing, and heavy manufacturing.

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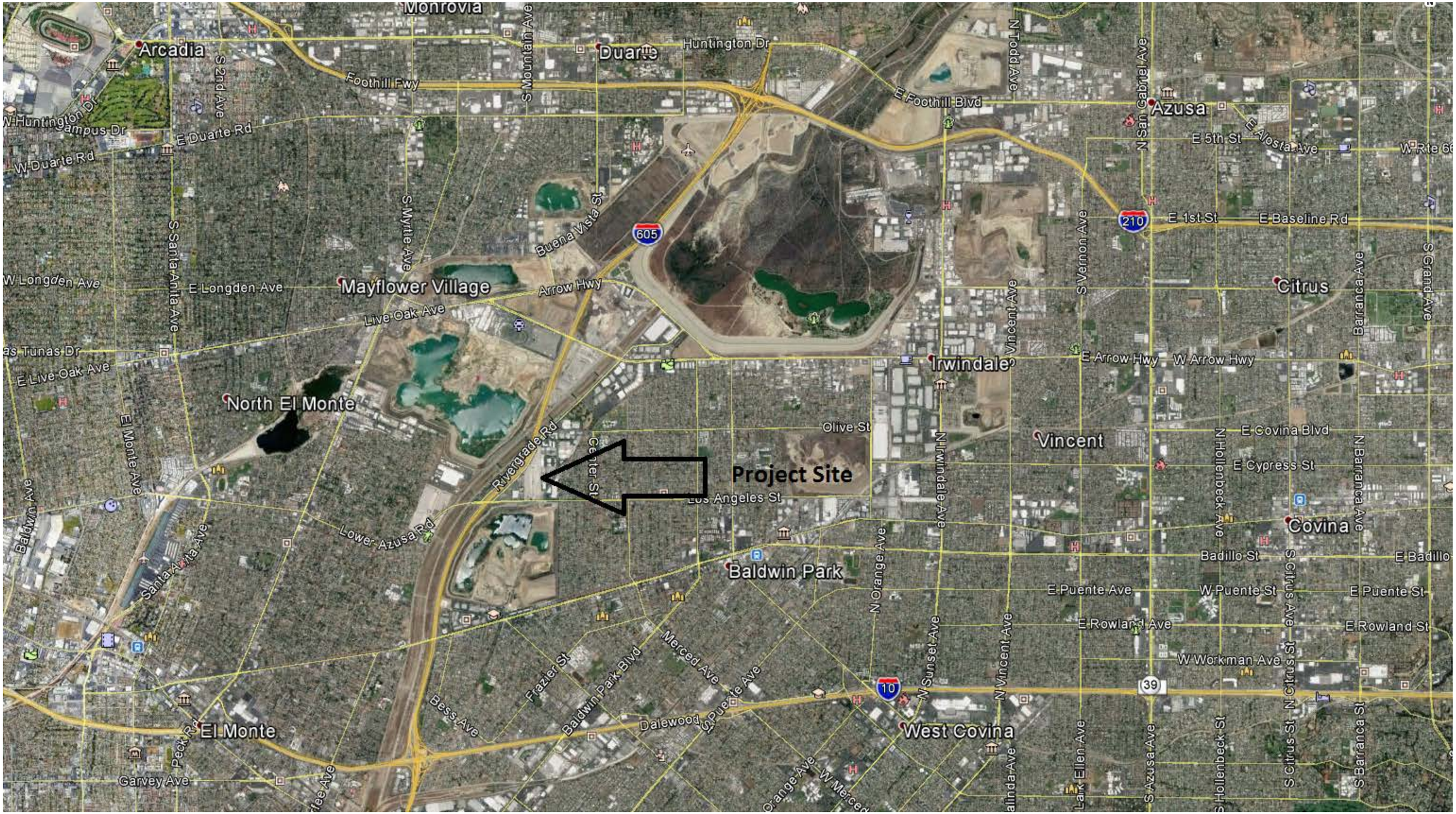

Map Date: *6/27/2019*
Photo (or Base) Source: *Google Earth*

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Figure 1. Project Vicinity

2019-030

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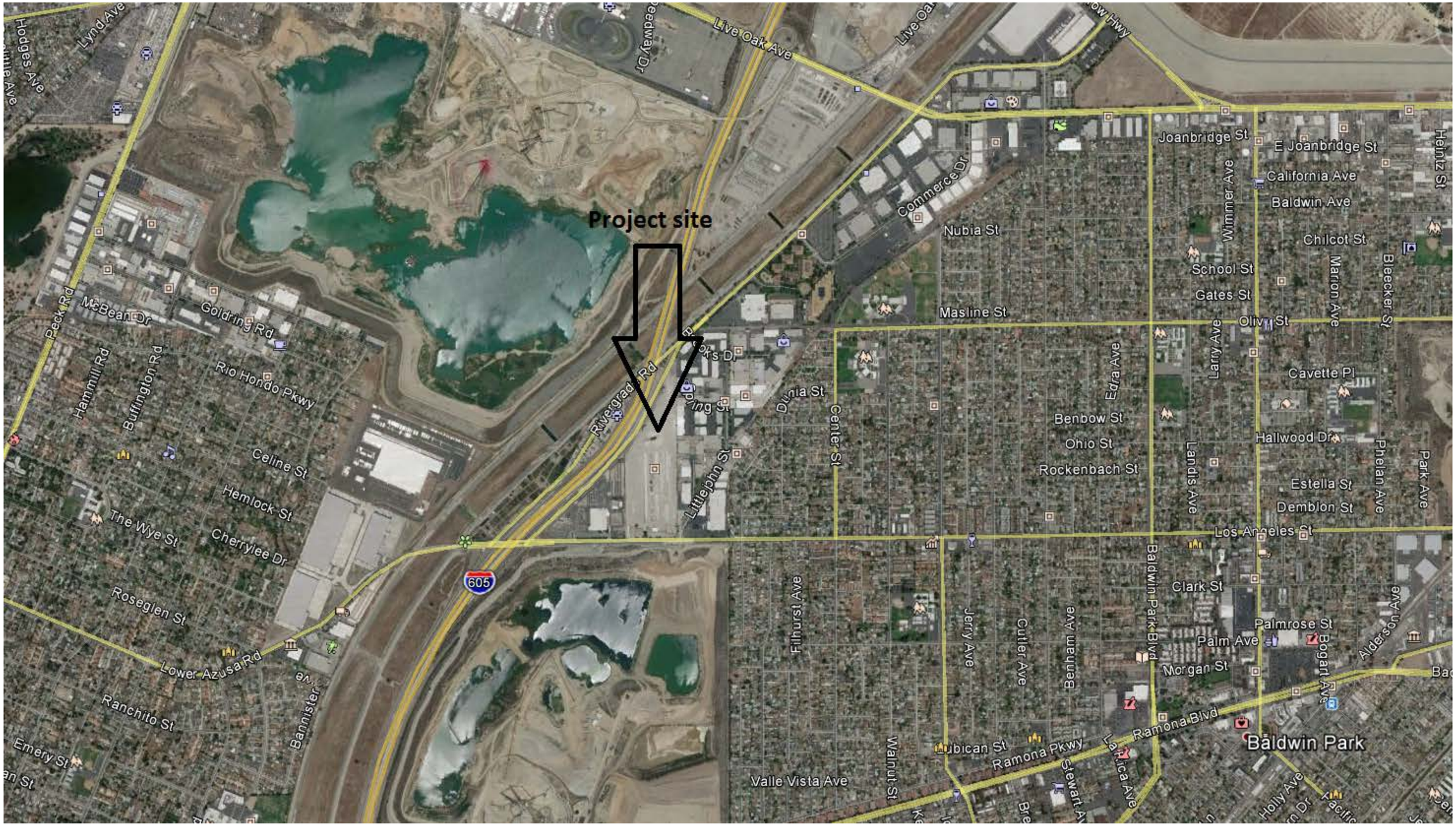

Map Date: *6/27/2019*
Photo (or Base) Source: *Google Earth*

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Figure 2. Project Location

2019-030

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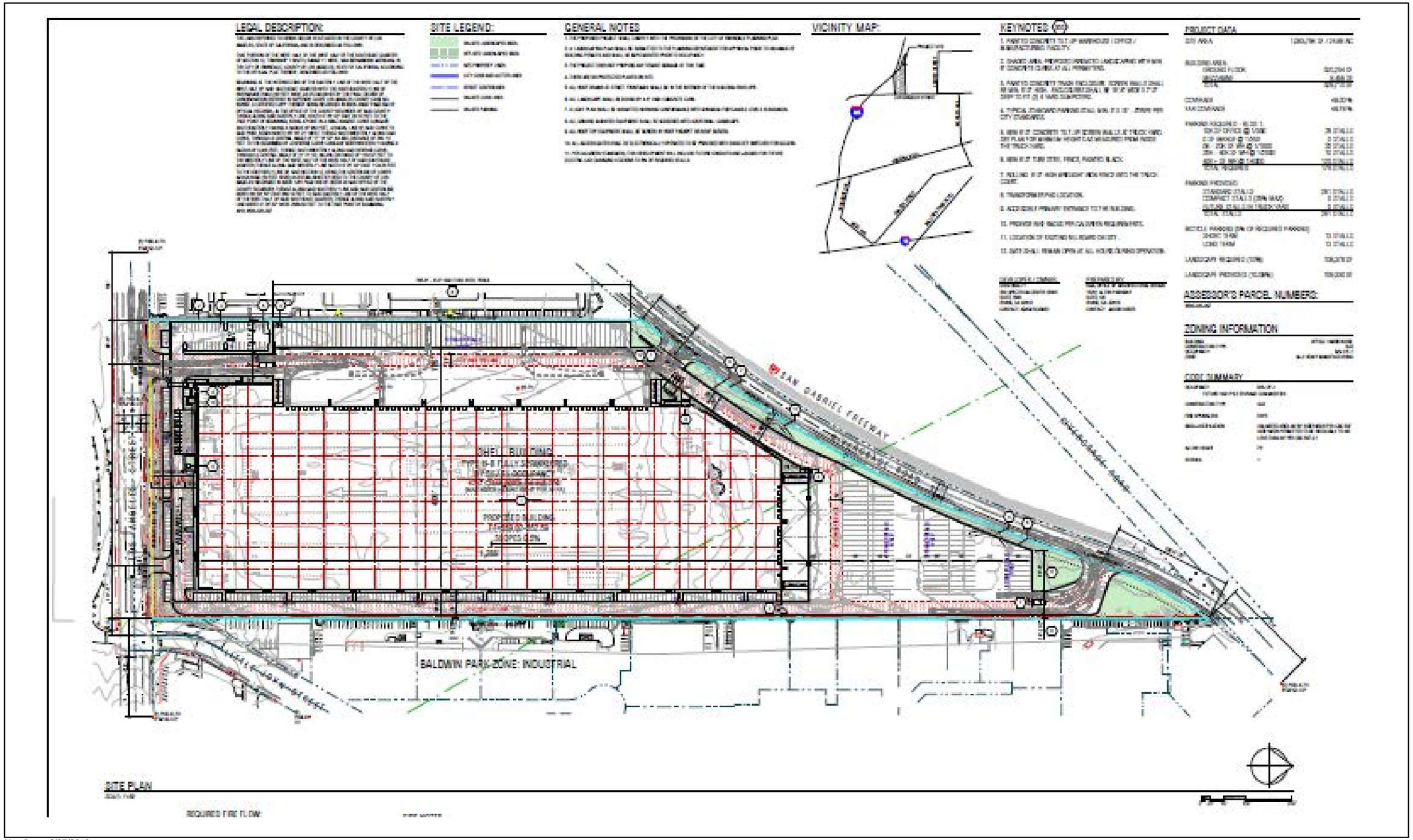

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Figure 3. Project Site Plan

2019-030

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2.0 ENVIRONMENTAL NOISE AND GROUNDBORNE VIBRATION ANALYSIS

2.1 Fundamentals of Noise and Environmental Sound

Addition of Decibels

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be 3 dB higher than one source under the same conditions (FTA 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by 3 dB). Under the decibel scale, three sources of equal loudness together would produce an increase of 5 dB.

Typical noise levels associated with common noise sources are depicted in **Figure 4**.

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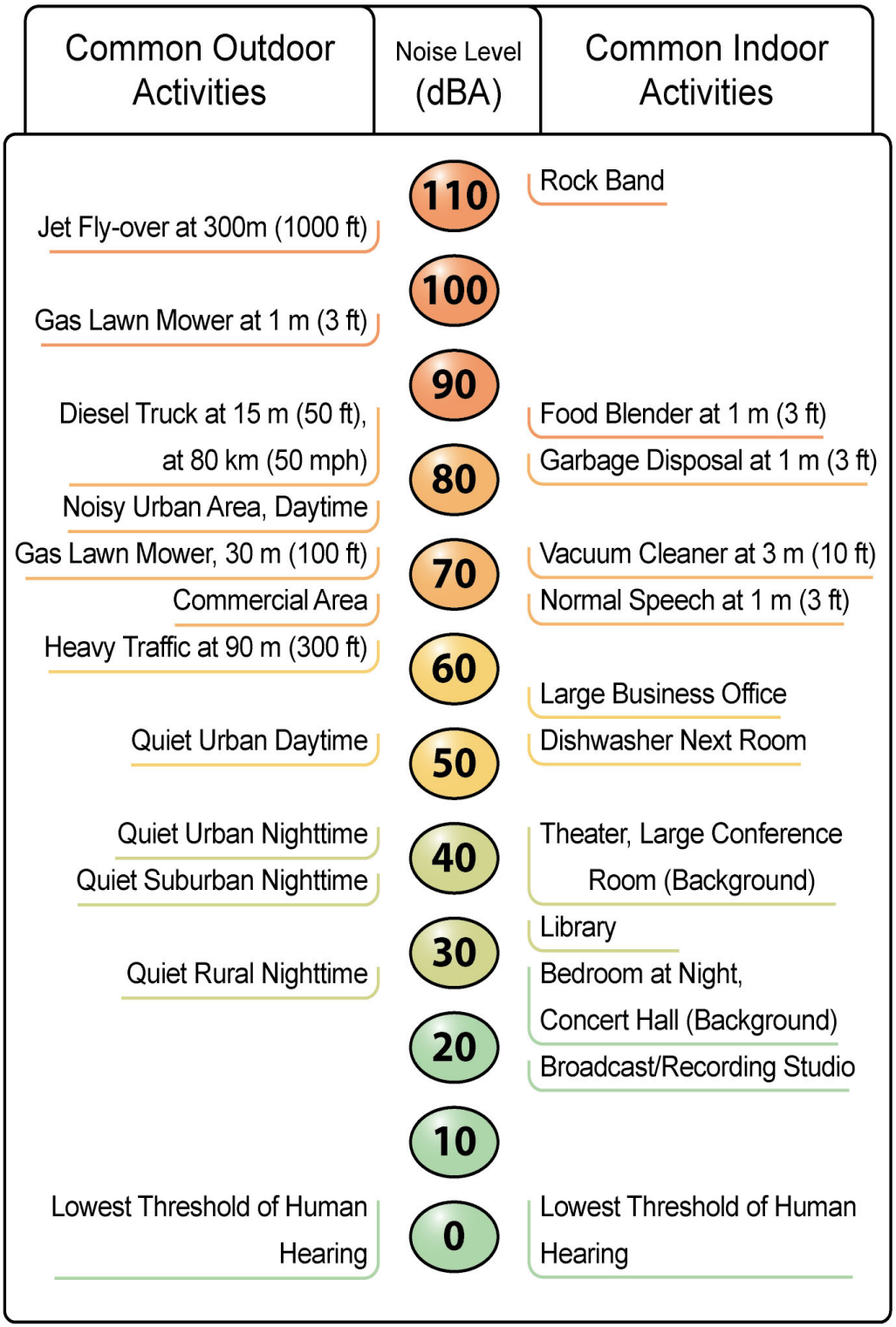

Source: Caltrans 2012

FIGURE 4. COMMON NOISE LEVELS

Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources, such as automobiles, trucks and airplanes, and stationary sources, such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2011). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. For line sources, an overall attenuation rate of 3 dB per doubling of distance is assumed (FHWA 2011).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about 5 dBA (FHWA 2006), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction 35 dBA or greater (WEAL 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the “line of sight” between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend length-wise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows. The exterior-to-interior reduction of newer residential units is generally 30 dBA or more.

Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL (Community Noise Equivalent Level) are measures of community noise. Each is applicable to this analysis and defined in **Table 1**.

The A weighted decibel sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Table 1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the Leq of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average Leq with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.4 dBA Ldn.
Community Noise Equivalent Level, CNEL	A 24-hour average Leq with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour Leq would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

Human Response to Noise

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in A-weighted noise levels (dBA), the following relationships should be noted in understanding this analysis:

- Except in carefully controlled laboratory experiments, a change of 1 dBA cannot be perceived by humans.
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference.
- A change in level of at least 5-dBA is required before any noticeable change in community response would be expected. An increase of 5 dBA is typically considered substantial.
- A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

Effects of Noise on People

<u>Hearing Loss</u>

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over 8 hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. For ground vehicles, a noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance.

2.2 Fundamentals of Environmental Groundborne Vibration

Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (earthquakes, volcanic eruptions, sea waves, landslides, etc.) or man-made causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity (PPV); another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity amplitudes are used to evaluate human response to vibration.

Vibration Sources and Characteristics

Table 2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows.

Ground vibration can be a concern in instances where buildings shake, and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in **Table 2** is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains,

and construction activities such as earth-moving which requires the use of heavy-duty earth moving equipment.

For the purposes of this analysis, a PPV descriptor with units of inches per section (in/sec) is used to evaluate construction-generated vibration for building damage and human complaints.

Table 2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

Peak Particle Velocity (inches/second)	Approximate Vibration Velocity Level (VdB)	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2004

3.0 EXISTING ENVIRONMENTAL NOISE SETTING

Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses.

The nearest noise-sensitive land uses to the Project site consist of a single-family residential neighborhood located adjacent to the eastern boundary of the Project, within the City of Baldwin Park. These sensitive receptors are located approximately 0.13 mile to the east.

Existing Ambient Noise Environment

The noise environment in the Proposed Project area is impacted by various noise sources. Mobile sources of noise, especially cars and trucks traveling on I-605 and Los Angeles Street, are the most common and significant sources of noise in Project area. Other sources of noise are the various land uses (i.e., residential, commercial and institutional) throughout the area that generate stationary-source noise. The Project site is located outside of any airport land use plan. Furthermore, the Project site is located beyond two miles from any airport (the San Gabriel Airport is the nearest airport to the Project site located approximately three miles to the southwest).

Existing Ambient Noise Measurements

The Project site does not currently support operations yet is covered in concrete and occupied by numerous buildings at the southern portion of the site. The site is flat, concreted and was previously developed for industrial use. It is surrounded by a mix of residential, commercial, industrial and undeveloped land uses. In order to quantify existing ambient noise levels in the Project area, ECORP Consulting conducted four short-term noise measurements on June 11, 2019. The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the Project site (see **Attachment A** for a visual depiction of the Noise Measurement Locations). The 10-minute measurements were taken between 2:01 p.m. and 3:13 p.m. Short-term (L_{eq}) measurements are considered representative of the noise levels throughout the day. The average noise levels and sources of noise measured at each location are listed in in **Table 3**.

Table 3. Existing (Baseline) Noise Measurements

Location Number	Location	L_{eq} dBA	L_{min} dBA	L_{max} dBA	Time
1	On Los Angeles Street, adjacent to the Project site.	77.8	58.2	94.2	2:01 p.m.-2:11 p.m.
2	On Los Angles Street, south of the nearest residence.	71.2	53.3	87.4	2:23 p.m.-2:33 p.m.
3	In neighborhood east of the Project site along Hornbrook Avenue	63.4	48.8	87.2	2:42 p.m.-2:52 p.m.
4	Along Center Street just north of Los Angeles Street, within the neighborhoods adjacent to the Project site.	61.6	48.3	81.3	3:03 p.m.-3:13 p.m.

*Source: Measurements were taken by ECORP Consulting with a Larson Davis SoundExpert LxT precision sound level meter, which satisfies the American National Standards Institute (ANSI) for general environmental noise measurement instrumentation. Prior to the measurements, the SoundExpert LxT sound level meter was calibrated according to manufacturer specifications with a Larson Davis CAL200 Class I Calibrator. See **Attachment A** for noise measurement outputs.*

As shown in **Table 3**, the ambient recorded noise levels range from 61.6 dBA to 77.8 dBA near the Project site. The most common noise in the Project vicinity is produced by automotive vehicles (cars, trucks, buses, motorcycles). Traffic moving along I-605 and Los Angeles Street produces a sound level that remains relatively constant and is part of the Project area's minimum ambient noise level. Vehicular noise

varies with the volume, speed and type of traffic. Slower traffic produces less noise than fast moving traffic. Trucks typically generate more noise than cars. Infrequent or intermittent noise also is associated with vehicles, including sirens, vehicle alarms, slamming of doors, trains, garbage and construction vehicle activity and honking of horns. These noises add to urban noise and are regulated by a variety of agencies.

Existing Roadway Noise Levels

Existing roadway noise levels were calculated for the roadway segments in the Project vicinity. This task was accomplished using the Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA-RD-77-108) (see **Attachment B**) and traffic volumes from the Project transportation impact analysis (KOA 2019). The model calculates the average noise level at specific locations based on traffic volumes, average speeds, roadway geometry, and site environmental conditions. The average vehicle noise rates (energy rates) used in the FHWA model have been modified to reflect average vehicle noise rates identified for California by the California Department of Transportation (Caltrans). The Caltrans data shows that California automobile noise is 0.8 to 1.0 dBA higher than national levels and that medium and heavy truck noise is 0.3 to 3.0 dBA lower than national levels. The average daily noise levels along these roadway segments are presented in **Table 4**.

Table 4. Existing (Baseline) Traffic Noise Levels

Roadway Segment	Surrounding Uses	CNEL at 100 feet from Centerline of Roadway
Los Angeles Street		
Los Angeles Street to Lower Azul Road	Residential	65.2
Little John Street to Los Angeles Street	Residential	64.6

*Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KOA Traffic Engineers (2019). Refer to **Attachment B** for traffic noise modeling assumptions and results.*

As shown, the existing traffic-generated noise level on Project-vicinity roadways currently ranges from 64.6 to 65.2 dBA CNEL. As previously described, CNEL is 24-hour average noise level with a 5 dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. It should be noted that the modeled noise levels depicted in **Table 4** may differ from measured levels in **Table 3** because the measurements represent noise levels at different locations around the Project site and are also reported in different noise metrics (e.g., noise measurements are the L_{eq} values and traffic noise levels are reported in CNEL).

4.0 REGULATORY FRAMEWORK

Federal

Occupational Safety and Health Act of 1970

The Federal Occupational Safety and Health Administration (OSHA) regulates on-site noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 decibels with A-weighting (dBA) over an 8-hour work shift (29 Code of Regulations [CFR] 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

State

State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL/L_{dn} contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

State Office of Planning and Research Noise Element Guidelines

The State Office of Planning and Research Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The Noise Element Guidelines contain a land use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

Local

City of Irwindale General Plan

The City of Irwindale General Plan uses the concept of land use compatibility to identifying noise-sensitive land uses. Noise considerations influence the general distribution, location, and intensity of future land uses. The result is that effective land use planning and mitigation can alleviate the majority of noise problems. The City has established the state's General Plan Guidelines for land use and noises. These provide a guide for compatibility of noise sensitive land uses in areas subject to noise. For instance, single-family residential uses are normally unacceptable in areas exceeding 70 dBA CNEL; though conditionally acceptable in areas experiencing noise levels between 55-70 dBA CNEL and always acceptable in areas experience noise levels less than 55 dBA CNEL. Commercial/professional office

buildings and industrial land uses are normally unacceptable in areas exceeding 75 dBA CNEL; conditionally acceptable in areas experiencing noise levels within 67 to 78 dBA CNEL, and acceptable in areas with noise levels less than 67 dBA CNEL.

City of Irwindale Municipal Code

The City's Municipal Code (Chapter 9.28) regulates noise from all sources, both stationary and mobile. These regulations, shown in **Table 5**, gauge the compatibility of developments on the ambient noise environment. Any noise which exceeds the ambient or the ambient base level set forth in **Table 5**, whichever is greater, by more than ten dB when measured at the property line will constitute an impact.

Table 5. City of Irwindale Ambient Base Noise Levels - Proof of Impact

Zone	Ambient Base Noise Level	
	10:00 p.m. to 7:00 a.m.	7:00 a.m. to 10:00 p.m.
Residential	45	50
Commercial	50	55
Industrial	60	70

Source: City of Irwindale Municipal Code

The City's Municipal Code exempts construction noise from all noise standards provided that construction is limited between the hours of 7:00 a.m. to 7:00 p.m. Monday through Saturday and is conducted with City permit. Construction noise occurring on Sundays or federal holidays is prohibited. Construction-related noise that occurs as a result of construction activities adhering to these daytime restrictions is deemed to comply with the City Municipal Code.

City of Baldwin Park Municipal Code

The City of Baldwin Park city limits is located directly across Little John Street, east of the Project site. As previously described, there are sensitive noise receptors consisting of single-family residences located within the City of Baldwin Park near the Project site. Baldwin Park Municipal Code Chapter 153, *Noise,* regulates noise. Baldwin Park Noise regulations are shown in **Table 6**.

Table 6. City of Baldwin Park Exterior Noise Standards			
Zone	**Allowable Noise Level (dBA)**		
Residential	**7:00 a.m. – 7:00 p.m. (Day)**	**7:00 p.m. – 10:00 p.m. (Evening)**	**10:00 p.m. – 7:00 a.m. (Night)**
	55	50	45
Nonresidential Uses			
Commercial	**7:00 a.m. – 10:00 p.m. (Day and evening)**	**7:00 p.m. – 7:00 a.m. (Night)**	
	65	55	
Industrial	Anytime	65	

Source: City of Baldwin Park Municipal Code

The City of Baldwin Park Municipal Code Section 130.37, *Special Noise Sources*, exempts noise from construction provided that construction is limited between the hours of 7:00 a.m. to 7:00 p.m.

City of Arcadia General Plan

The City of Arcadia's General Plan Noise Element is intended to minimize adverse noise impacts on residence and to preserve a quality noise environment. The Nosie Element recognizes that transportation is the dominant source of noise in the City and provides noise standards for new development impacted by transportation noise sources. These standards are presented in **Table 7**.

Table 7. City of Arcadia Interior/Exterior Noise Standards		
Land Use	**Maximum Exterior Noise Level**	**Maximum Interior Noise Level**
Residential: Rural, Single-family and Multifamily	65 dBA CNEL	45 dBA CNEL
Schools		
Classroom	70 dBA CNEL	45 dBA I_{eq}
Playground	70 dBA CNEL	-
Libraries	-	45 dBA
Hospitals/ Convalescent Facilities		
Sleeping Areas	65 dBA CNEL	45 dBA CNEL
Living Areas	-	50 dBA CNEL
Reception, Office	-	50 dBA L_{eq}
Hotels/Motels		
Sleeping Areas	-	45 dBA CNEL
Reception, Office	-	50 dBA L_{eq}
Places of Worship	65 dBA CNEL	45 dBA L_{eq}
Open Space/ Recreation		
Wildlife Habitat	60 dBA CNEL	-
Passive Recreation Areas	65 dBA CNEL	-
Active Recreation Areas	70 dBA CNEL	-
Commercial and Business Park		
Office	-	55 dBA L_{eq}
Restaurant, Retail, Service	-	65 dBA L_{eq}
Warehousing/ Industrial	-	70 dBA L_{eq}

Source: City of Arcadia General Plan

5.0 IMPACT ASSESSMENT

Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would:

1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

2) Generation of excessive groundborne vibration or groundborne noise levels.

3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

For purposes of this analysis and where applicable, the City of Irwindale, Baldwin Park and Arcadia numeric noise thresholds were used for evaluation of Project-related noise impacts. Consistent with the City of Irwindale standards, in the instance that the existing ambient noise levels already exceed the ambient base noise level (see **Table 5**), an increase of more than 10 dBA over the existing ambient noise level is considered significant. The cities of Baldwin Park and Arcadia do not provide guidance for determining a significant Project-related noise impact when the existing ambient noise levels already exceed the significance standard without the Project. As previously described, a change in level of at least 5 dBA is required before any noticeable change in community response would be expected. Therefore, in the case that the existing ambient noise levels already exceed the applicable numeric noise threshold within the cities of Baldwin Park and/or Arcadia, an increase of more than 5 dBA over the existing ambient noise level will be considered significant.

This impact discussion uses Caltrans (2002) recommended standard of 0.2 inches per second peak particle velocity with respect to the prevention of structural damage for normal buildings from construction-generated groundborne vibration.

Methodology

This analysis of the existing and future noise environments is based on noise prediction modeling and empirical observations. Predicted construction noise levels were calculated utilizing the Federal Highway Administration's Roadway Construction Model (2008). Transportation-source noise levels in the Project vicinity were calculated using the FHWA Highway Noise Prediction Model (FHWA-RD-77-108). For Project operations the model was updated to reflect the anticipated amount of medium-duty and heavy-duty trucks generated by the Project, as supplied by KOA (2019), since these vehicles produce more noise than the average vehicle. On-site stationary source noise levels have been calculated with the SoundPLAN 3D noise model, which predicts noise propagation from a noise source based on the location, noise level, and frequency spectra of the noise sources as well as the geometry and reflective properties of the local terrain, buildings and barriers.

Groundborne vibration levels associated with construction-related activities for the Project were evaluated utilizing typical groundborne vibration levels associated with construction equipment. Potential groundborne vibration impacts related to structural damage and human annoyance were evaluated, taking into account the distance from construction activities to nearby structures and typically applied criteria for structural damage and human annoyance.

Impact Analysis

PROJECT CONSTRUCTION NOISE

Would the Project Result in Short-Term Construction-Generated Noise in Excess of Standards?

Construction noise associated with the Proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for on-site construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, material handlers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect residences in the vicinity of the construction site. As previously stated, the closest residences are located adjacent to the eastern boundary of the Project site, approximately 0.13 mile distant. It is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to Project sensitive receptors.

Noise levels associated with individual construction equipment are summarized in **Table 8**.

Table 8. Typical Construction Equipment Noise Levels		
Type of Equipment	**Maximum Noise (L_{max}) at 50 Feet (dBA)**	**Maximum 8-Hour Noise (L_{eq}) at 50 Feet (dBA)**
Crane	80.6	72.6
Dozer	81.7	77.7
Excavator	80.7	76.7
Generator	80.6	77.6
Grader	85.0	81.0
Other Equipment (greater than 5 horsepower)	85.0	82.0
Paver	77.2	74.2
Roller	80.0	73.0
Tractor	84.0	80.0
Dump Truck	76.5	72.5
Concrete Pump Truck	81.4	74.4
Welder	74.0	70.0

Source: Federal Highway Administration, Roadway Construction Noise Model (FHWA-HEP-05-054), dated January 2006.

Note: L_{eq} is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eg} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of weather the noise occurs during the day or night, L_{max} is the maximum and minimum A-weighted noise level during the measurement period.

The nearest noise-sensitive land uses consist of single-family residences 0.13 mile (686 feet) east of the Project site boundary. Based on the construction equipment noise levels listed in **Table 8** and assuming an average noise attenuation rate of 6 dB per doubling of distance from the source, predicted maximum 8-hour noise levels at the nearest sensitive receptor would range from approximately 59.3 dBA L_{eq} to 47.3 dBA L_{eq}. As identified in **Table 3**, the existing baseline measurements conducted within this residential community (Measurement Locations #2 and #3), experiences ambient noise levels that already exceed these values (63.4 dBA to 71.2 dBA). Thus, temporary Project construction noise would typically be lower than noise levels currently experienced at these receptors.

As previously discussed, Project would occur in the City of Irwindale, yet the nearest sensitive receptors are located in the City of Baldwin Park. Neither the City of Irwindale of the City of Baldwin Park promulgate a numeric threshold pertaining to noise associated with construction. Rather, both cities limit the time that construction can take place between the hours of 7:00 a.m. and 7:00 p.m. This is due to the fact that construction noise is temporary, short term, intermittent in nature, and would cease on completion of the Project. Furthermore, the cities of Irwindale and Baldwin Park are developing communities and construction noise is generally considered standard and accepted as a reality within the urban environment. Further, construction would occur throughout the Project site and would not be

concentrated at one point. Therefore, noise associated with construction activities, as long as conducted within the permitted hours, would not exceed any noise standards.

PROJECT OPERATIONAL NOISE

Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of City Standards During Operations?

Project Operations

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise-sensitive and may warrant unique measures for protection from intruding noise. The nearest noise-sensitive land uses consist of single-family residences located 0.13 mile east of the Project site.

Operational noise sources associated with the Proposed Project include mobile and stationary (i.e., mechanical equipment, warehouse operations) sources.

Operational Traffic Noise

Future traffic noise levels throughout the Project vicinity (i.e., vicinity roadway segments that traverse noise sensitive residential land uses) were modeled based on the traffic volumes identified by KOA (2019) to determine the noise levels along Project vicinity roadways. **Table 9** shows the calculated off-site roadway noise levels under existing traffic levels compared to future buildout of the Project. The calculated noise levels as a result of the Project at affected sensitive land uses are compared to the noise standards in the City of Arcadia General Plan (see **Table 7**) for the segment of Lower Azul Road west of I-605, and the City of Baldwin Park Municipal Code Noise Standards (see **Table 6**) for the segment on of Los Angeles Street east of Little John Street. In the case that the existing ambient noise levels already exceed the applicable numeric noise threshold within the cities of Baldwin Park and/or Arcadia, an increase of more than 5 dBA over the existing ambient noise level is considered significant.

Table 9. Existing Plus Project Conditions - Predicted Traffic Noise Levels					
Roadway Segment	**Surrounding Uses**	**CNEL at 100 feet from Centerline of Roadway**		**Noise Standard (dBA CNEL)[2]**	**Exceed Standard / Significant Impact?**
		Existing Conditions	**Existing + Project Conditions[1]**		
Los Angeles Street / Lower Azul Road					
West of I-605 Offramp / Lower Azul Road Intersection	Residential (in the City of Arcadia)	65.2	65.3	70.2 dBA	**No**
East of Little John Street / Los Angeles Street Intersection	Residential (in the City of Baldwin Park)	64.6	64.9	69.6 dBA	**No**

*Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KOA 2019. Refer to **Attachment B** for traffic noise modeling assumptions and results.*

Note: [1]The percentage of medium-duty and heavy-duty trucks was updated to reflect the Project traffic fleet mix supplied by KOA, since medium-duty and heavy-duty trucks produce more noise than the average vehicle.

[2]Both Project roadway segments analyzed are in the Project vicinity and traverse noise sensitive residential land uses. These roadway segments already generate noise levels in excess of respective noise standards (65 dBA in Arcadia and 55 dBA in Baldwin Park), without the Project. Therefore, the Project significance threshold equates to an increase of more than 5 dBA over the existing ambient noise level.

As shown in **Table 9**, both Project roadway segments are already experiencing roadway noise that exceeds respective noise standards under existing conditions. Thus, Project-generated traffic noise is compared to a significance threshold of contribution of more than 5 dBA over the existing ambient noise level. As shown, the Project would not contribute to an increase of noise levels more than 5 dBA on either Project vicinity roadway segment that traverses noise-sensitive residential land uses. No applicable noise standards would be exceeded by Project traffic.

Operational Stationary Noise

The main stationary operational noise associated with the Project would be warehouse-related activity, such as trucks idling and maneuvering the site. On-site Project operations have been calculated using the SoundPLAN 3D noise model. The results of this model can be found in **Attachment B**. **Table 10** shows the predicted Project noise levels at the six locations in the Project vicinity, as predicted by SoundPLAN. Four of these locations (1 – 4) are where the existing baseline noise measurements were taken (see **Table 3**), while the additional two locations (5 & 6) are the nearest buildings to the Project site, which house industrial operations. Additionally, a noise contour graphic (**Figure 4**) has been prepared to depict the predicted noise levels in the Project vicinity from Project operations.

Table 10. Modeled Operational Noise Levels[1]

Site Location	Location	Baseline Noise Measurements (L_{eq} dBA)	Modeled Operational Noise Attributable to Project (L_{eq} dBA)	City Standards (dBA)[2]	Exceed Standard?
1	On Los Angeles Street, adjacent to the Project site. (**Irwindale**)	77.8	**81.6**	87.8	**No**
2	On Los Angles Street, south of the nearest residence. (**Baldwin Park**)	71.2	**56.0**	76.2	**No**
3	In neighborhood east of the Project site along Hornbrook Avenue. (**Baldwin Park**)	63.4	**55.8**	68.4	**No**
4	Along Center Street just north of Los Angeles Street, within the neighborhoods adjacent to the Project site. (**Baldwin Park**)	61.6	**48.5**	66.6	**No**
5	Industrial use east of the Project site. (**Irwindale**)	N/A	**73.8**	80.0	**No**
6	Industrial use west of the Project site. (**Irwindale**)	N/A	**73.8**	80.0	**No**

*Source: Stationary source noise levels were modeled by ECORP Consulting using SoundPLAN 3D noise model. Refer to **Attachment C** for noise modeling assumptions and results.*

Notes: [1]Source noise measurements identify 79 dBA for heavy-duty truck maneuvering per the San Jose Loading Dock Noise Study 2014. This reference measurement informed the SoundPLAN model to predict Project noise propagation.

[2]Consistent with the City of Irwindale standards, in the instance that the existing ambient noise levels already exceed the ambient base noise level in Irwindale, an increase of more than 10 dBA over the existing ambient noise level is considered significant. The cities of Baldwin Park and Arcadia do not provide guidance for determining a significant Project-related noise impact when the existing ambient noise levels already exceed the significance standard without the Project. In the case that the existing ambient noise levels already exceed the applicable numeric noise threshold within the cities of Baldwin Park and/or Arcadia, an increase of more than 5 dBA over the existing ambient noise level will be considered significant.

The City of Irwindale's regulations with respect to noise are included in Chapter 9.28 of the City's Municipal Code. As depicted in **Table 5** above, the City ambient base noise level for land uses zoned for 'Industrial' land uses, like that of the Project and the areas directly adjacent to the Project site, is 60 dBA from 10:00 p.m. to 7:00 a.m. (nighttime) and 70 dBA from 7:00 a.m. to 10:00 p.m. (daytime). Any noise which exceeds the ambient base level, set forth in **Table 5**, by more than ten dB when measured at the property line is deemed unacceptable. Project operations would take place between 7:00 a.m. and 6:00 p.m. and are thus compared to the City of Irwindale's daytime noise standard of ten dBA above the ambient base level of 70 dBA at the adjacent 'Industrial' land uses (i.e., 80 dBA). These nearby 'Industrial' land uses, located in the City of Irwindale, are represented as Location 5 and Location 6 in **Table 10**. As previously described, stationary source noise levels have been calculated with the SoundPLAN 3D noise model, which predicts noise propagation based on the location, noise level, and frequency spectra of the noise sources as well as the geometry and reflective properties of the local terrain, buildings and barriers. The primary Project stationary source would be the movement of trucks on the Project site. Truck movements include including truck approach, backup alarms, idling, air brake discharge, engine ignition, and truck pull away. As shown in **Table 10** above, Project noise levels at Location 5 and Location 6 have the potential to experience noise levels up to 73.8 dBA. Thus, Project operations would not exceed the ambient base level for 'Industrial' land uses, set forth in **Table 5,** by more than 10 dBA.

The City of Baldwin Park, located east of the Project site, promulgates noise standards in Chapter 153 its Municipal Code. As depicted in **Table 6**, the City of Baldwin Park regulates exterior noise standards for various land uses. Areas zoned 'Residential', like that of the land uses located east of the Project site, have a daytime standard of 55 dBA. As shown in **Table 10** above, Project-generated noise levels at the nearest residence, Location 2, have the potential to reach up to 56 dBA during Project operations. Project-generated noise levels at the neighborhood east of the Project site along Hornbrook Avenue (Location 3) have the potential to reach 55.8 dBA. These values exceed the day, evening and night noise standards for residences. However, the existing baseline noise levels at Location 2 were measured as 71.2 dBA and the existing baseline noise levels at Location 3 were measured at 63.4 dBA. As such, these residences already experience noise levels in excess of City of Baldwin Park standards. As previously described, in the case that the existing ambient noise levels already exceed the numeric noise threshold within Baldwin Park, an increase of more than 5 dBA over the existing ambient noise level will be considered significant. As shown in **Table 10**, on-site Project noise would not even surpass the noise levels that are already experienced in at Locations 2 and 3. The same is the case at the Baldwin Park residences represented at Location 4. Therefore, Project noise would not result in an increase of 5 dBA or more over the existing ambient noise level currently experienced.

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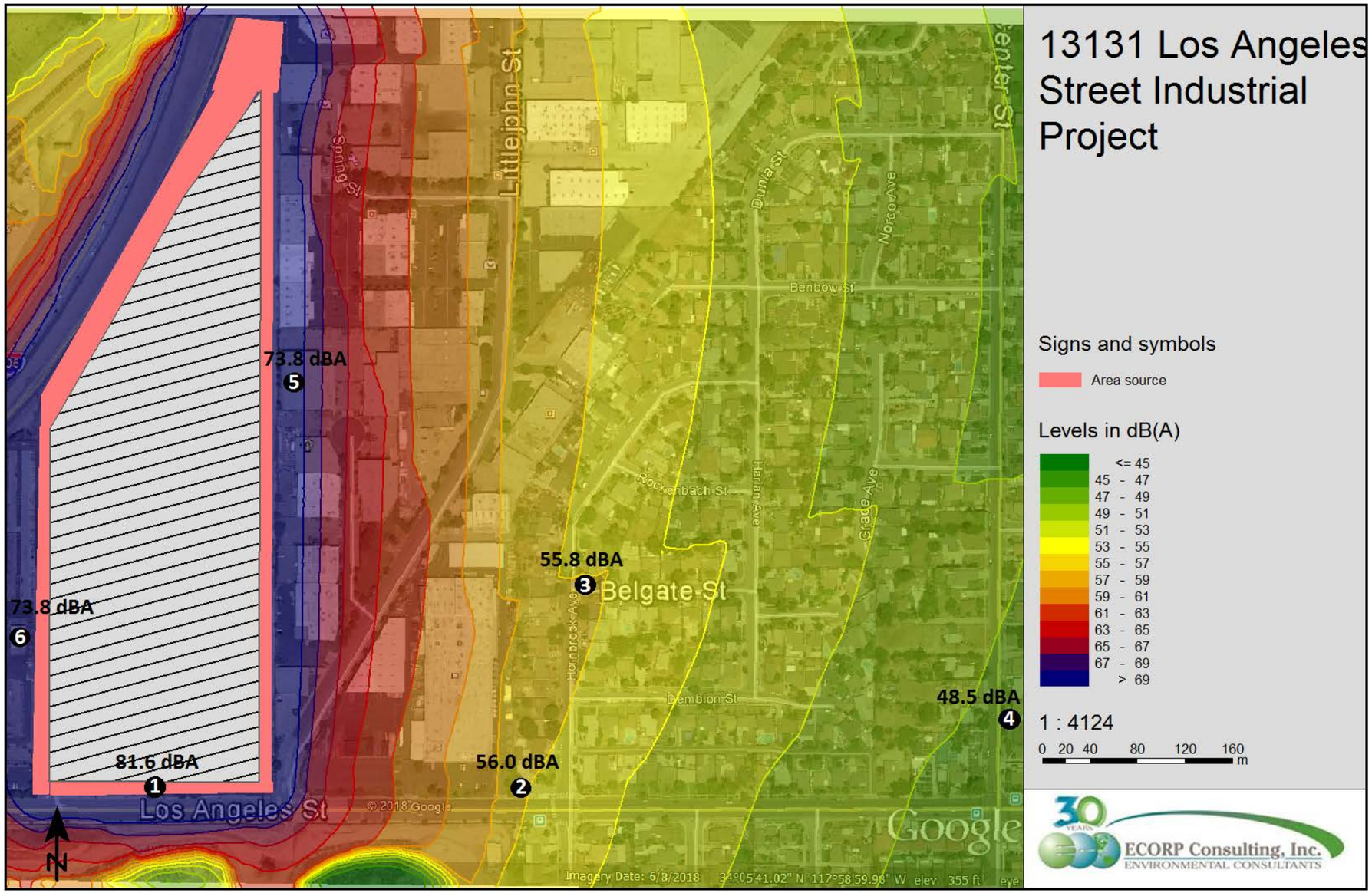

Map Date: *6/27/2019*
Photo (or Base) Source: *SoundPLAN*

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 5. Project Noise Propagation

2019-030

RESULT IN THE EXPOSURE OF PERSONS TO OR GENERATION OF EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS

Would the Project Expose Structures to Substantial Groundborne Vibration During Construction?

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would be primarily associated with short-term construction-related activities. Construction on the Project site would have the potential to result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is noted that pile drivers would not be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with construction equipment are summarized in **Table 11**.

Table 11. Representative Vibration Source Levels for Construction Equipment

Equipment Type	Peak Particle Velocity at 20 Feet (inches per second)
Large Bulldozer	0.123
Caisson Drilling	0.123
Loaded Trucks	0.105
Rock Breaker	0.082
Jackhammer	0.048
Small Bulldozer/Tractor	0.004

Source: FTA 2018; Caltrans 2004

The City of Irwindale does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans's (2004) recommended standard of 0.2 inches per second peak particle velocity with respect to the prevention of structural damage for older residential buildings is used as a threshold. This is also the level at which vibrations may begin to annoy people in buildings.

It is acknowledged that construction activities would occur throughout the Project site and would not be concentrated at the point closest to the nearest structure. The nearest structures of concern to the construction site are associated with an 'Industrial' use located approximately 20 feet to the east. Based on the vibration levels presented in **Table 11**, ground vibration generated by heavy-duty equipment would not be anticipated to exceed approximately 0.123 inches per second peak particle velocity at 20

feet. Thus, the structure located at 20 feet would not be negatively affected. Predicted vibration levels at the nearest structures would not exceed recommended criteria.

Would the Project Expose Structures to Substantial Groundborne Vibration During Operations?

Project operations would not include the use of any stationary equipment that would result in excessive vibration levels. While the Project would accommodate heavy-duty trucks, these vehicles can only generate groundborne vibration velocity levels of 0.006 PPV at 50 feet under typical circumstances. Therefore, the Project would result in negligible groundborne vibration impacts during operations.

Cumulative Construction Noise

Construction activities associated with the Proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas immediately adjacent to the construction site. Construction noise for the Proposed Project was determined to be less than significant following compliance with the City of Irwindale Municipal Code and the City of Baldwin Park's Municipal Code. Cumulative development in the vicinity of the Project site could result in elevated construction noise levels at sensitive receptors in the Project area. However, each project would be required to comply with the applicable city's Municipal Code limitations on construction. Therefore, the Project would not contribute to cumulative impacts during construction.

Cumulative Traffic Source Noise Impacts

According to the U.S. EPA, cumulative noise impacts represent the combined and incremental effects of human activities that accumulate over time. While the incremental impacts may be insignificant by themselves, the combined effect may result in a significant impact. Conversely, although there may be a significant noise increase due to the Proposed Project in combination with other related projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the Proposed Project.

Cumulative noise impacts would occur primarily as a result of increased traffic on local roadways due to operations of the Project and other projects in the vicinity. A project's contribution to a cumulative traffic noise increase could be considered significant when the combined effect exceeds the perception level (i.e., auditory level increase) threshold. The combined effect compares the "Cumulative Plus Project" condition to "Existing" conditions. This comparison accounts for the traffic noise increase generated by a project combined with the traffic noise increase generated by projects in the area. The incremental effect compares the "Cumulative Plus Project" condition to the "Cumulative No Project" condition.

The following combined effect and incremental effect criteria have been utilized to evaluate the overall effect of the cumulative noise increase.

- *Combined Effect*. The cumulative with Project noise level ("Cumulative Plus Project") would cause a significant cumulative impact if a 3.0 dB increase over Existing Conditions occurs and the resulting noise level exceeds the applicable exterior standard at a sensitive use. Although there may be a significant noise increase due to the Proposed Project in combination with other related

projects (combined effects), it must also be demonstrated that the Project has an incremental effect. In other words, a significant portion of the noise increase must be due to the Proposed Project.

- *Incremental Effects*. The "Cumulative Plus Project" causes a 1.0 dBA increase in noise over the "Cumulative No Project" noise level.

A significant impact would result only if *both* the combined and incremental effects criteria have been exceeded at a single roadway segment, since such would indicate that there is a significant noise increase due to the Proposed Project in combination with other related projects AND a significant portion of the noise increase is due to the Proposed Project. Noise by definition is a localized phenomenon and reduces as distance from the source increases. Consequently, only the Proposed Project and growth due to occur in the Project site's general vicinity would contribute to cumulative noise impacts. **Table 12** lists the traffic noise effects along roadway segments in the Project vicinity for "Existing," "Cumulative No Project," and "Cumulative Plus Project," conditions, including incremental and net cumulative impacts.

Table 12. Cumulative Traffic Noise Scenario

Roadway Segment	Existing	Cumulative No Project	Cumulative Plus Project	Combined Effects	Incremental Effects	Cumulatively Significant Impact?
	CNEL @ 100 Feet from Roadway Centerline	CNEL @ 100 Feet from Roadway Centerline	CNEL @ 100 Feet from Roadway Centerline	Difference in CNEL Between Existing and Cumulative + Project	Difference in CNEL Between Cumulative No Project and Cumulative + Project	
Los Angeles Street / Lower Azul Road						
West of I-605 Offramp / Lower Azul Road Intersection	65.2	65.4	65.5	**0.3**	**0.1**	**No**
East of Little John Street / Los Angeles Street Intersection	64.6	64.7	65.0	**0.4**	**0.3**	**No**

*Source: Traffic noise levels were calculated by ECORP Consulting using the FHWA roadway noise prediction model in conjunction with the trip generation rate identified by KOA 2019. Refer to **Attachment B** for traffic noise modeling assumptions and results.*

Note: The percentage of medium duty and heavy-duty trucks was updated to reflect that of the traffic report supplied by KOA. Medium duty and heavy-duty trucks produce more noise than the average vehicle. Both Project roadway segments analyzed are in the Project vicinity and traverse noise sensitive residential land uses.

As shown in **Table 12**, no significant cumulative traffic noise impact would result on any of the Project vicinity roadway segments traversing noise sensitive residential land uses. In neither case would Project-generated traffic noise surpass the incremental effect threshold of a 1.0 dBA increase over the Cumulative No Project scenario, or the combined effect threshold of a 3.0 dBA increase over Existing Conditions. Therefore, no perceptible increase of traffic noise would occur as a result of the Cumulative Plus Project scenario.

Cumulative Stationary Source Noise Impacts

Long-term stationary noise sources associated with the development at the Project, combined with other cumulative projects could cause local noise level increases. Noise levels associated with the Proposed Project and related cumulative projects together could result in higher noise levels than considered separately. As previously described, on-site noise sources associated with the Proposed Project would was found to be acceptable as the surrounding land uses are already experiencing levels above the City's noise standards. The Project would not be increasing noise levels above the current ambient noise environment and would not be increasing noise levels by more than 10 dBA in Irwindale or 5 dBA in either Arcadia or Baldwin Park. Therefore, the Project would not contribute to cumulative impacts during operations.

6.0 REFERENCES

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ATTACHMENT A

Baseline (Existing) Noise Measurements – Project Site and Vicinity

Site Number: 1			
Recorded By: Lindsay Liegler			
Job Number: 2019-030			
Date: 6/11/2019			
Time: 2:01 p.m.			
Location: Along Los Angeles Street adjacent to the Project site.			
Source of Peak Noise: Vehicles traveling along Los Angeles Street			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
77.8	58.2	94.2	113.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**6/04/2018**	
	Microphone	**Larson Davis**	**377B02**	**174464**	**5/31/2018**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**6/04/2018**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**5/31/2018**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Partly Cloudy
	Note: dBA Offset = 0.06		**Sensor Height (ft): 3.5** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	8-10	98°	29.91

Photo of Measurement Location

Summary

File Name on Meter	LxT_Data.124
File Name on PC	SLM_0005120_LxT_Data_124.00.ldbin
Serial Number	0005120
Model	SoundExpert® LxT
Firmware Version	2.302
User	Jerry Aguirre
Location	Irwindale/Baldwim Park
Job Description	2019-030 Industrial Spec Tilt-Up Project
Note	

Measurement

Description	
Start	2019-06-11 13:59:35
Stop	2019-06-11 14:09:35
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2019-06-11 13:48:15
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Fast
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.7 dB

	A	**C**	**Z**
Under Range Peak	79.0	76.0	**81.0** dB
Under Range Limit	**28.0**	26.4	34.0 dB
Noise Floor	17.3	17.3	23.7 dB

Results

LAeq	77.8 dB	
LAE	105.6 dB	
EA	4.015 mPa²h	
LZpeak (max)	2019-06-11 14:01:28	113.5 dB

LAFmax	2019-06-11 14:08:51	94.2 dB
LAFmin	2019-06-11 14:03:39	58.2 dB
SEA	-99.9 dB	

LAF > 85.0 dB (Exceedance Counts / Duration)	15	21.2 s
LAF > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	77.8	77.8	-99.9	77.8	77.8	-99.9

LCeq	84.9	dB
LAeq	77.8	dB
LCeq - LAeq	7.1	dB
LAIeq	79.6	dB
LAeq	77.8	dB
LAIeq - LAeq	1.8	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	77.8		84.9			
LF(max)	94.2	2019/06/11 14:08:51				
LF(min)	58.2	2019/06/11 14:03:39				
LPeak(max)					113.5	2019/06/11 14:01:28

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAF5.00	83.4	dB
LAF10.00	81.4	dB
LAF33.30	75.4	dB
LAF50.00	72.1	dB
LAF66.60	70.0	dB
LAF90.00	64.8	dB

Site Number: 2			
Recorded By: Lindsay Liegler			
Job Number: 2019-030			
Date: 6/11/2019			
Time: 2:23 p.m.			
Location: Along Los Angeles Street, south of the nearest residence			
Source of Peak Noise: Vehicles traveling along Los Angeles Street			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
71.2	53.3	87.4	108.5

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**6/04/2018**	
	Microphone	**Larson Davis**	**377B02**	**174464**	**5/31/2018**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**6/04/2018**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**5/31/2018**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Partly Cloudy
	Note: dBA Offset = 0.06		**Sensor Height (ft): 3.5** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	8-10	98°	29.91

Photo of Measurement Location

Summary

File Name on Meter	LxT_Data.125
File Name on PC	SLM_0005120_LxT_Data_125.00.ldbin
Serial Number	0005120
Model	SoundExpert® LxT
Firmware Version	2.302
User	Jerry Aguirre
Location	Irwindale/Baldwim Park
Job Description	2019-030 Industrial Spec Tilt-Up Project
Note	

Measurement

Description	
Start	2019-06-11 14:22:30
Stop	2019-06-11 14:32:30
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2019-06-11 13:48:11
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Fast		
Preamp	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Freq. Weighting	Z Weighting		
OBA Max Spectrum	Bin Max		
Overload	122.7 dB		
	A	**C**	**Z**
Under Range Peak	79.0	76.0	**81.0** dB
Under Range Limit	**28.0**	26.4	34.0 dB
Noise Floor	17.3	17.3	23.7 dB

Results

LAeq	71.2 dB	
LAE	99.0 dB	
EA	886.953 µPa²h	
LZpeak (max)	2019-06-11 14:27:28	108.5 dB

LAFmax	2019-06-11 14:27:28	87.4 dB
LAFmin	2019-06-11 14:30:59	53.3 dB
SEA	-99.9 dB	

LAF > 85.0 dB (Exceedance Counts / Duration)	2	1.1 s
LAF > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	71.2	71.2	-99.9	71.2	71.2	-99.9

LCeq	79.0	dB
LAeq	71.2	dB
LCeq - LAeq	7.7	dB
LAIeq	73.6	dB
LAeq	71.2	dB
LAIeq - LAeq	2.4	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	71.2		79.0			
LF(max)	87.4	2019/06/11 14:27:28				
LF(min)	53.3	2019/06/11 14:30:59				
LPeak(max)					108.5	2019/06/11 14:27:28

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAF5.00	76.8	dB
LAF10.00	74.9	dB
LAF33.30	70.3	dB
LAF50.00	67.8	dB
LAF66.60	64.8	dB
LAF90.00	59.3	dB

Site Number: 3			
Recorded By: Lindsay Liegler			
Job Number: 2019-030			
Date: 6/11/2019			
Time: 2:42 p.m.			
Location: In neighborhood east of the Project site along Hornbrook Avenue			
Source of Peak Noise: Vehicles on nearby roadway and other urban sounds.			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
63.4	48.8	87.2	106.2

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**6/04/2018**	
	Microphone	**Larson Davis**	**377B02**	**174464**	**5/31/2018**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**6/04/2018**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**5/31/2018**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Partly Cloudy
	Note: dBA Offset = 0.06		**Sensor Height (ft): 3.5** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	8-10	98°	29.91

Photo of Measurement Location

Summary

File Name on Meter	LxT_Data.126
File Name on PC	SLM_0005120_LxT_Data_126.00.ldbin
Serial Number	0005120
Model	SoundExpert® LxT
Firmware Version	2.302
User	Jerry Aguirre
Location	Irwindale/Baldwim Park
Job Description	2019-030 Industrial Spec Tilt-Up Project
Note	

Measurement

Description	
Start	2019-06-11 14:41:48
Stop	2019-06-11 14:51:48
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2019-06-11 13:48:11
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting		
Peak Weight	Z Weighting		
Detector	Fast		
Preamp	PRMLxT1L		
Microphone Correction	Off		
Integration Method	Linear		
OBA Range	Normal		
OBA Bandwidth	1/1 and 1/3		
OBA Freq. Weighting	Z Weighting		
OBA Max Spectrum	Bin Max		
Overload	122.7 dB		
	A	**C**	**Z**
Under Range Peak	79.0	76.0	**81.0** dB
Under Range Limit	**28.0**	26.4	34.0 dB
Noise Floor	17.3	17.3	23.7 dB

Results

LAeq	63.4 dB	
LAE	91.2 dB	
EA	144.978 µPa²h	
LZpeak (max)	2019-06-11 14:43:01	106.2 dB

LAFmax	2019-06-11 14:43:01	87.2 dB
LAFmin	2019-06-11 14:43:56	48.8 dB
SEA	-99.9 dB	

LAF > 85.0 dB (Exceedance Counts / Duration)	1	0.9 s
LAF > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	63.4	63.4	-99.9	63.4	63.4	-99.9

LCeq	73.6	dB
LAeq	63.4	dB
LCeq - LAeq	10.2	dB
LAIeq	66.1	dB
LAeq	63.4	dB
LAIeq - LAeq	2.7	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	63.4		73.6			
LF(max)	87.2	2019/06/11 14:43:01				
LF(min)	48.8	2019/06/11 14:43:56				
LPeak(max)					106.2	2019/06/11 14:43:01

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAF5.00	67.8	dB
LAF10.00	64.5	dB
LAF33.30	55.8	dB
LAF50.00	53.1	dB
LAF66.60	51.9	dB
LAF90.00	50.8	dB

Site Number: 4			
Recorded By: Lindsay Liegler			
Job Number: 2019-030			
Date: 6/11/2019			
Time: 3:03 p.m.			
Location: On Center Street just north of Los Angels Street in the neighborhood			
Source of Peak Noise: Vehicles traveling along Center Street			
Noise Data			
Leq (dB)	**Lmin (dB)**	**Lmax (dB)**	**Peak (dB)**
61.6	48.3	81.3	101.7

Equipment						
Category	**Type**	**Vendor**	**Model**	**Serial No.**	**Cert. Date**	**Note**
Sound	Sound Level Meter	**Larson Davis**	**LxT SE**	**0005120**	**6/04/2018**	
	Microphone	**Larson Davis**	**377B02**	**174464**	**5/31/2018**	
	Preamp	**Larson Davis**	**PRMLxT1L**	**042852**	**6/04/2018**	
	Calibrator	**Larson Davis**	**CAL200**	**14105**	**5/31/2018**	

Weather Data			
Est.	**Duration:** 10 minutes		**Sky:** Partly Cloudy
	Note: dBA Offset = 0.06		**Sensor Height (ft): 3.5** ft
	Wind Ave Speed (mph)	**Temperature (degrees Fahrenheit)**	**Barometer Pressure (hPa)**
	8-10	98°	29.91

Photo of Measurement Location

Summary

File Name on Meter	LxT_Data.127
File Name on PC	SLM_0005120_LxT_Data_127.00.ldbin
Serial Number	0005120
Model	SoundExpert® LxT
Firmware Version	2.302
User	Jerry Aguirre
Location	Irwindale/Baldwim Park
Job Description	2019-030 Industrial Spec Tilt-Up Project
Note	

Measurement

Description	
Start	2019-06-11 15:02:59
Stop	2019-06-11 15:12:59
Duration	00:10:00.0
Run Time	00:10:00.0
Pause	00:00:00.0
Pre Calibration	2019-06-11 13:48:11
Post Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Fast
Preamp	PRMLxT1L
Microphone Correction	Off
Integration Method	Linear
OBA Range	Normal
OBA Bandwidth	1/1 and 1/3
OBA Freq. Weighting	Z Weighting
OBA Max Spectrum	Bin Max
Overload	122.7 dB

	A	**C**	**Z**
Under Range Peak	79.0	76.0	**81.0** dB
Under Range Limit	**28.0**	26.4	34.0 dB
Noise Floor	17.3	17.3	23.7 dB

Results

LAeq	61.6 dB	
LAE	89.4 dB	
EA	96.466 µPa²h	
LZpeak (max)	2019-06-11 15:04:01	101.7 dB

LAFmax	2019-06-11 15:04:41	81.3 dB
LAFmin	2019-06-11 15:10:58	48.3 dB
SEA	-99.9 dB	

LAF > 85.0 dB (Exceedance Counts / Duration)	0	0.0 s
LAF > 115.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 135.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 137.0 dB (Exceedance Counts / Duration)	0	0.0 s
LZpeak > 140.0 dB (Exceedance Counts / Duration)	0	0.0 s

Community Noise	**Ldn**	**LDay 07:00-22:00**	**LNight 22:00-07:00**	**Lden**	**LDay 07:00-19:00**	**LEvening 19:00-22:00**
	61.6	61.6	-99.9	61.6	61.6	-99.9

LCeq	69.4	dB
LAeq	61.6	dB
LCeq - LAeq	7.8	dB
LAIeq	64.4	dB
LAeq	61.6	dB
LAIeq - LAeq	2.8	dB

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	61.6		69.4			
LF(max)	81.3	2019/06/11 15:04:41				
LF(min)	48.3	2019/06/11 15:10:58				
LPeak(max)					101.7	2019/06/11 15:04:01

# Overloads	0	
Overload Duration	0.0	s
# OBA Overloads	0	
OBA Overload Duration	0.0	s

Statistics

LAF5.00	67.4	dB
LAF10.00	64.9	dB
LAF33.30	59.0	dB
LAF50.00	57.0	dB
LAF66.60	54.9	dB
LAF90.00	52.1	dB

ATTACHMENT B

Federal Highway Administration Highway Noise Prediction Model (FHWA-RD-77-108) Outputs – Project Traffic Noise

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2019-030
Project Name: Irwindale Industrial

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: KOA
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Heavy Trucks	Distance from Centerline of Roadway CNEL at 100 Feet	Distance to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL	Calc Dist	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn
Analysis Condition - Existing Conditions																						
Los Angeles Street																						
West of Lower Azul Road (Arcadia)	4	1	24,192	45	0.5	1.8%	0.7%	**65.2**	48	103	221	476	100	18,797	3,072	2,322	381	151	22	5	33	14
East of Little John St (Baldwin P)	4	1	21,384	45	0.5	1.8%	0.7%	**64.6**	-	95	204	439	100	16,615	2,716	2,053	337	133	19	4	29	12

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2019-030
Project Name: Irwindale Industrial

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: KOA
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Vehicle Mix Heavy Trucks	Distance from Centerline of Roadway: CNEL at 100 Feet	Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL	Calc Dist	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn
Analysis Condition - Existing Plus Project Conditions																						
Los Angeles Street																						
West of Lower Azul Road (Arcadia)	4	1	24,246	45	0.5	1.8%	0.8%	**65.3**	48	104	224	483	100	18,839	3,079	2,328	382	173	22	6	33	16
East of Little John St (Baldwin P)	4	1	21,492	45	0.5	1.9%	1.0%	**64.9**	46	99	214	460	100	16,699	2,729	2,063	357	191	21	6	31	17

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2019-030
Project Name: Irwindale Industrial

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: KOA
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix Medium Trucks	Heavy Trucks	Distance from Centerline of Roadway CNEL at 100 Feet	Distance to Contour 70 CNEL	65 CNEL	60 CNEL	55 CNEL	Calc Dist	Traffic Volumes Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn
Analysis Condition - Cumulative No Project Conditions																						
Los Angeles Street																						
West of Lower Azul Road (Arcadia)	4	1	25,353	45	0.5	1.8%	0.7%	**65.4**	49	106	228	491	100	19,699	3,220	2,434	399	158	23	5	34	14
East of Little John St (Baldwin P)	4	1	21,888	45	0.5	1.8%	0.7%	**64.7**	45	96	207	446	100	17,007	2,780	2,101	344	137	20	4	30	12

TRAFFIC NOISE LEVELS AND NOISE CONTOURS

Project Number: 2019-030
Project Name: Irwindale Industrial

Background Information

Model Description: FHWA Highway Noise Prediction Model (FHWA-RD-77-108) with California Vehicle Noise (CALVENO) Emission Levels.
Source of Traffic Volumes: KOA
Community Noise Descriptor: L_{dn}: _____ CNEL: x

Assumed 24-Hour Traffic Distribution:	Day	Evening	Night
Total ADT Volumes	77.70%	12.70%	9.60%
Medium-Duty Trucks	87.43%	5.05%	7.52%
Heavy-Duty Trucks	89.10%	2.84%	8.06%

Analysis Condition / Roadway, Segment	Lanes	Median Width	ADT Volume	Design Speed (mph)	Alpha Factor	Vehicle Mix: Medium Trucks	Vehicle Mix: Heavy Trucks	CNEL at 100 Feet	Distance from Centerline of Roadway: Distance to Contour: 70 CNEL	65 CNEL	60 CNEL	55 CNEL	Calc Dist	Traffic Volumes: Day	Eve	Night	MTd	HTd	MTe	HTe	MTn	HTn
Analysis Condition - Cumulative Plus Project Conditions																						
Los Angeles Street																						
West of Lower Azul Road (Arcadia)	4	1	25,407	45	0.5	1.8%	0.8%	**65.5**	50	107	231	498	100	19,741	3,227	2,439	400	181	23	6	34	16
East of Little John St (Baldwin P)	4	1	21,969	45	0.5	1.9%	0.9%	**65.0**	46	99	214	461	100	17,070	2,790	2,109	365	176	21	6	31	16

ATTACHMENT C

SoundPLAN Outputs – On-Site Project Noise

SoundPLAN
Output Source Information

Number	Reciever Name	Floor	Level at Receiver
1	On Los Angeles Street, adjacent to the Project site.	Ground Floor	81.6 dBA
2	On Los Angles Street, south of the nearest residence.	Ground Floor	56.0 dBA
3	In neighborhood east of the Project site along Hornbrook Avenue	Ground Floor	55.8 dBA
4	Along Center Street just north of Los Angeles Street, within the neighborhoods adjacent to the Project site.	Ground Floor	48.5 dBA
5	Industrial use east of the Project site.	Ground Floor	73.8 dBA
6	Industrial use west of the Project site.	Ground Floor	73.8 dBA

Number	Noise Source Information	Citation	Level at Source
1	Truck Loading Dock - One Truck	City of San Jose 2014 Midpoint at 237 Loading Dock Noise Study	79.0 dBA

APPENDIX J

Traffic Impact Study

TRAFFIC IMPACT STUDY
Irwindale Industrial Project
13131 Los Angeles Street, Irwindale

January 2020

Prepared For:

ECORP Consulting, Inc.
1801 Park Court Place, Building B, Suite 103
Santa Ana, CA 92701

JB81279 – Rev 2

Prepared by:

1100 Corporate Center
Drive, Suite 201
Monterey Park, CA 91754
(323) 260-4703

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EXECUTIVE SUMMARY

The following summarizes the traffic study results, conclusions and recommendations:

- The proposed Project is an industrial building of 525,000 square feet in interior floor area. Access would be provided by site driveways on Los Angeles Street at the south side of the site and on Rivergrade Road at the northwest side of the site. The project tenants are not yet identified, but are anticipated to be warehouse or light industrial land uses.

- The Project is anticipated to be completed and occupied by the end of the year 2021.

- The proposed Project site is currently unoccupied, but had a former industrial use that has been analyzed for a trip generation credit based on the number of employees.

<u>Trip Generation</u>

- The trip generation of the project was calculated using nationally-accepted rates defined by the Institute of Transportation Engineers (ITE) –Trip Generation (10th edition). The light industrial rate is the highest rate in the larger industrial land use category within the ITE reference, and therefore the application of that rate is more conservative.

- The proposed Project would generate 3,210 daily trips, including 450 vehicle trips during the a.m. peak hour (301 inbound trips and 149 outbound trips) and 406 vehicle trips during the p.m. peak hour (140 inbound trips and 266 outbound trips).

<u>Significant Intersection Impacts and Mitigation</u>

- Based on the applied City of Irwindale significant traffic impact criteria, the proposed Project would create significant traffic impacts at these study intersections under future with-Project conditions.

    - 11. I-605 Southbound Ramps/Los Angeles Street
    - 12. I-605 Northbound Ramps/Los Angeles Street

- The analyzed mitigation measures were the addition of lanes to the freeway off-ramps at both locations. These improvements would require widening of the off-ramp facilities. At the southbound off-ramp location, intersection 11, the recommended mitigation measure is an added left-turn lane at the ramp approach. At the northbound off-ramp location, intersection 12, the recommended mitigation measure is an added right-turn lane at the ramp approach.

- The analyzed mitigation measures would fully mitigate the identified impacts at both study intersections, under both existing plus-Project and future with-Project conditions.

<u>CMP and Freeway Impacts</u>

- The proposed Project is not anticipated to cause a significant traffic impact at any Metro Congestion Management Program (CMP) arterial monitoring intersections, but would exceed CMP freeway segment thresholds.

- A Caltrans facility impact analysis was conducted that included freeway mainline segments, diverging/converging points between ramps and the mainline, and queuing at freeway off-ramps.

- At six freeway mainline segments and three diverging/merging areas, potentially significant impacts would occur per Caltrans standards due to the proposed Project.

- Based on an analysis of ramp queues and existing lengths, operations will be significantly impacted under Future-with-Project conditions at three off-ramps. The Project creates a new queuing impact (compared with Future-without-Project conditions) at the I-605 southbound off-ramp at Lower Azusa Road.

Main Project Driveway Controls

- A traffic signal warrant analysis was conducted for the main Project driveway on Los Angeles Street. The City Engineer would make the final determination as to traffic signal need, but the peak-hour volume warrant was met at that location for the post-project period.

1. INTRODUCTION

The proposed Project is an industrial building at 13131 Los Angeles Street, within the City of Irwindale. KOA Corporation has been retained to analyze the potential traffic impacts associated with the proposed Project. The scope and methodologies used for this traffic study were developed in accordance with current traffic study guidelines and policies of the City of Irwindale.

1.1 PROJECT DESCRIPTION

The proposed Project is an industrial building of 525,000 square feet in interior floor area. Access would be provided by site driveways on Los Angeles Street at the south side of the site and on Rivergrade Road at the northwest side of the site. The project tenants are not yet identified, but are anticipated to be warehouse or light industrial land uses. .

The Project is anticipated to be completed and occupied by the end of the year 2021. The proposed Project site plan is illustrated on Figure 1.

1.2 PROJECT STUDY AREA

The project study area, as defined through consultation with City staff, includes the following 13 study intersections:

1. I-605 Southbound Off-ramp/Arrow Highway
2. I-605 Northbound On-ramp/Arrow Highway
3. Rivergrade Road/ Arrow Highway
4. Stewart Avenue/ Rivergrade Road
5. I-605 Southbound On-ramp/Live Oak Avenue
6. I-605 Northbound Off-ramps/Live Oak Avenue
7. Graham Access Road/ Live Oak Avenue
8. Rivergrade Road/Live Oak Avenue
9. Rivergrade Road/Commerce Drive
10. Rivergrade Road/Brooks Avenue
11. I-605 Southbound Ramps/Los Angeles Street
12. I-605 Northbound Ramps/Los Angeles Street
13. Little John Street/Los Angeles Street

A signal warrant analysis was conducted for the main/south site driveway on Los Angeles Street.

Project-related impacts were also assessed at 12 mainline locations on the I-10, I-210 and I-605 freeways, and at eight ramp locations on the 605 freeway. The locations are listed below.

<u>Mainline Locations</u>

1. I-210 West of I-605
2. I-605 SB North of Arrow Hwy
3. I-605 SB Arrow Hwy to Live Oak
4. I-605 SB Live Oak to Lower Azusa
5. I-605 SB South of Lower Azusa
6. I-10 West of I-605
7. I-10 East of I-605

8. I-605 NB South of Lower Azusa
9. I-605 NB Lower Azusa to Live Oak
10. I-605 NB Live Oak to Arrow Highway
11. I-605 NB North of Arrow Highway
12. I-210 East of I-605

<u>I-605 Ramp Locations</u>

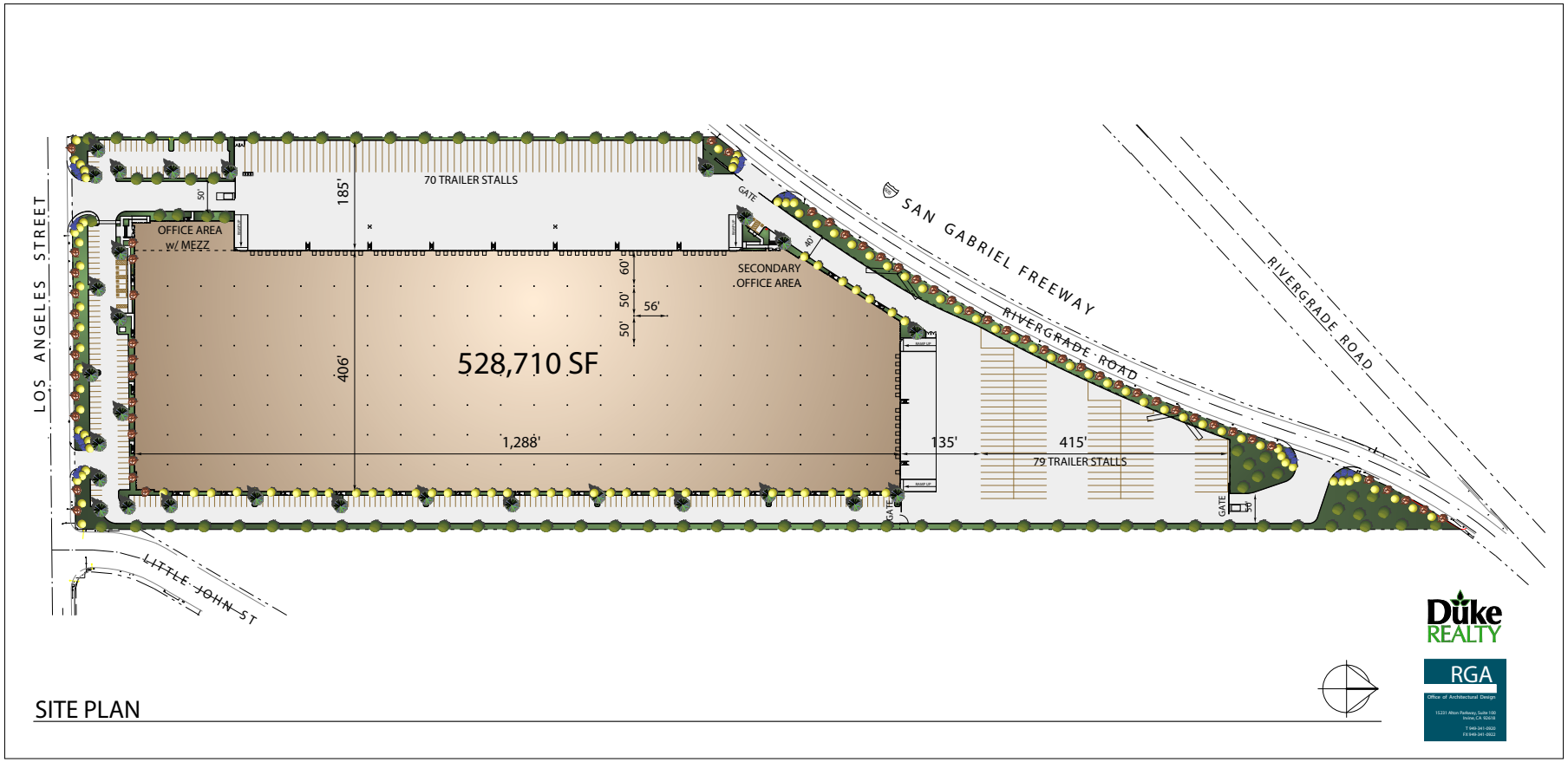
1. NB Off at Los Angeles Street
2. NB On from Los Angeles Street
3. NB Off at Live Oak avenue
4. NB On from Arrow Highway Eastbound
5. NB On from Arrow Highway Westbound
6. SB Off at Arrow Highway
7. SB On from Live Oak avenue
8. SB Off at Lower Azusa Road
9. SB On from Lower Azusa Road

Figure 2 illustrates the locations of the study intersections. Details on the freeway level-of-service analysis are provided in the section on "Congestion Management Program and Freeway Impacts."

FIGURE 1

13131 Los Angeles Street EIR

Site Plan



SITE PLAN

FIGURE 2

13131 Los Angeles Street EIR

Study Area and Intersections

1.3 ANALYZED SCENARIOS

Traffic impacts associated with the proposed Project were analyzed at the study intersections for the weekday a.m. and weekday p.m. peak-hour periods. The study included the analysis of the following traffic scenarios:

- Existing
- Existing with Project
- Future without Project
- Future with Project

1.4 ANALYSIS METHODOLOGY

KOA coordinated with City of Irwindale staff as the first step in the traffic analysis, in order to define the study area and other major details. The scoping document provided to the City and then revised based on comments is provided in Appendix A.

The following text describes the methodology applied in this report.

Existing Condition

New traffic counts were conducted at the study intersections. The counts were used to determine existing traffic conditions. Counts included auto and truck counts, with the latter categorized by number of axles. Passenger Car Equivalency (PCE) factors were applied to the truck volumes based on categories of axle numbers – two, three, and four plus. The factors applied to these categories were 2.0, 2.5, and 3.0, respectively.

Fieldwork within the study area was undertaken to identify the condition of key study area roadways including traffic control and approach lane configuration at each study intersection, and on-street parking restrictions.

The existing level of service (LOS) at each of the study intersections is discussed in Section 2 of this report.

Project Trip Generation and Distribution

Project trip generation was based on land use intensities and trip rates defined by *Trip Generation, 10th Edition,* published by the Institute of Transportation Engineers (ITE). The trip generation and distribution calculations are discussed in Section 3 of this report.

Existing with-Project Condition

Based on the projected Project traffic and the traffic count totals, an Existing plus-Proposed Project conditions scenario was analyzed per the *Sunnyvale* and *Smart Rail* California Environmental Quality Act (CEQA) court case decisions that determined that project impacts should be analyzed against existing conditions.

The level of service analysis for existing with-Project conditions is discussed in Section 4 of this report.

Future without-Project Condition

In order to account for traffic growth in the study area, an ambient/background traffic growth rate was applied to the existing traffic counts. In addition, traffic from related/area projects (approved and pending developments) was also added to the study area. The levels of service at the study intersections for future without-Project conditions are discussed in Section 5 of this report.

Future with-Project Condition

Based on the future without-Project volumes plus traffic from the proposed Project, the future with-Project traffic volume conditions were determined and analyzed. The levels of service for this scenario are discussed in Section 6 of this report.

Level of Service Methodology

The City of Irwindale published traffic impact study guidelines, to be applied to projects within the City. The current version of the guidelines is dated December 30, 2014.

For analysis of LOS at signalized intersections, the City of Irwindale has designated the Intersection Capacity Utilization (ICU) methodology as the desired tool. The concept of roadway level of service under the ICU methodology is calculated as the volume of vehicles that pass through the facility divided by the capacity of that facility. A 10% adjustment to the clearance and loss time factor based on the critical phases of the signalized control was included in the traffic analysis. A facility is "at capacity" (ICU value of 1.00 or greater) when extreme congestion occurs. This value is a function of hourly volumes, signal phasing, and approach lane configuration on each leg of the intersection.

For intersections 6 and 9, which are stop-controlled, LOS was analyzed based on the Highway Capacity Manual (HCM) un-signalized intersection methodology. This method calculates roadway level of service based on intersection delay, defined as the worst-case approach delay experienced by users of the intersection who must stop or yield to free-flow through traffic. The method uses a "gap acceptance" technique to predict driver delay.

A facility with LOS A indicates excellent operating conditions with little delay to motorists, whereas LOS F represents congested conditions with excessive vehicle delay.

Tables 1 and 2 define the level of service criteria applied to the unsignalized and signalized study intersections.

Table 1 – All-Way and Partial Stop-Controlled (HCM) Intersection Level of Service Definitions

LOS	Average Control Delay (sec/veh)
A	0 - 10
B	10 to 15
C	15-25
D	25-35
E	35-50
F	>50

Table 2 – Signalized Intersection (ICU)
Level of Service Definitions

LOS	Volume to Capacity Ratio
A	0 - .600
B	.601 to .700
C	.701-.800
D	.801-.900
E	.901-1.000
F	>1.000

Significant Traffic Impacts

Significant impacts of a proposed Project at an intersection must be mitigated to a level of insignificance, where feasible. Determination of potential significant traffic impacts due to the proposed Project is discussed in Section 7 of this report.

2. EXISTING CONDITIONS

This section describes the existing conditions within the study area in terms of roadway facilities, transit service and traffic operating conditions.

2.1 EXISTING ROADWAY SYSTEM

The key roadways within the study area are described here. The discussion is limited to specific roadways that traverse the study intersections and serve the Project site. Figure 3 illustrates the existing traffic controls and approach lane geometries at the study intersections.

Arrow Highway is classified, in the study area vicinity, as a Main Arterial Highway by the City of Irwindale General Plan. This roadway provides two travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 45 miles per hour.

Brooks Drive is classified as a Residential Roadway in the City of Baldwin Park General Plan. This roadway provides 1 travel lane in each direction. On-street parking is prohibited on both sides of the roadway west (or north) of Little John Street and permitted on both sides of the roadway east of Little John Street. The prima facie speed limit is 25 miles per hour.

Commerce Drive is classified as a Collector Street in the City of Irwindale General Plan. The roadway provides one lane of travel in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 40 miles per hour.

Little John Street is classified as a Residential Roadway in the City of Baldwin Park General Plan. This roadway provides one travel lane in each direction. On-street parking is permitted on the north half of the roadway (towards Brooks Drive) and prohibited on the south half (towards Los Angeles Street). The posted speed limit is 40 miles per hour.

Live Oak Avenue is classified by the Irwindale General Plan as a Major Arterial east of the junction with Arrow Highway. This roadway generally provides two travel lanes in the westbound direction and three travel lanes in the eastbound direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 45 miles per hour.

Los Angeles Street/Lower Azusa Road is classified as a Secondary Highway in the City of Irwindale General Plan and as a Collector/Industrial Roadway in the City of Baldwin Park General Plan. This roadway provides two travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 45 miles per hour

Rivergrade Road is classified as a Secondary Highway in the City of Irwindale General Plan. The roadway provides two lanes of travel in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit ranges from 40 to 50 miles per hour.

Stewart Avenue is classified as a Collector Street in the Irwindale General Plan. This roadway provides two travel lanes in each direction. On-street parking is generally prohibited on both sides of the roadway. The posted speed limit is 30 miles per hour.

2.2 EXISTING TRANSIT SERVICE

The vicinity of the proposed Project site is served by bus transit lines operated by Foothill Transit. Table 2 provides a description of the service provided by these lines.

Table 3 – Existing Transit Service Summary

Agency	Line	From	To	Via	Peak Frequency
Foothill Transit	178	El Monte Bus Station	Puente Hills Mall	Valley Boulevard, Cogswell Road, Lower Azusa Road, Los Angeles Street, West Covina Parkway	28 minutes
Foothill Transit	492	El Monte Bus Station	Montclair Metrolink	Arrow Highway, Live Oak Avenue	19-20 minutes
Foothill Transit	272	Duarte	West Covina Parkway/California Avenue	Buena Vista Street, Arrow Highway, Rivergrade Road, Stewart Avenue, Baldwin Park Blvd	30 minutes

2.3 EXISTING TRAFFIC VOLUMES

Vehicle turning movement counts were collected at the study intersections on April 10th and April 11th of 2019 from 7:00 a.m. to 9:00 a.m. and from 4:00 p.m. to 6:00 p.m. Counts included auto and truck counts, with the latter categorized by number of axles. Passenger Car Equivalency (PCE) factors were applied to the truck volumes based on categories of axle numbers – two, three, and four plus.

Existing weekday a.m. peak-hour and p.m. peak-hour traffic turn movement volume count summaries are provided in Appendix B of this report.

2.4 EXISTING INTERSECTION LEVEL OF SERVICE

Based on the intersection lane configurations and the existing traffic volumes, volume-to-capacity ratios and average delay values and corresponding levels of service (LOS) were determined for each of the study intersections during the weekday a.m. and p.m. peak hours.

Table 4 summarizes the volume-to-capacity ratios and LOS values for existing traffic conditions.

Table 4 – Study Intersection Existing Conditions

	Study Intersections	Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.134	**F**	0.620	B
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.723	C	0.625	B
4	Stewart Avenue/ Rivergrade Road	0.337	A	0.356	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.849	D	1.248	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	1081.6	**F**	606.9	**F**
7	Graham Access Road/ Live Oak Avenue	0.655	B	0.670	B
8	Rivergrade Road/Live Oak Avenue	0.649	B	0.961	**E**
9	Rivergrade Road/Commerce Drive*	24.1	C	25.1	D
10	Rivergrade Road/Brooks Avenue	0.475	A	0.370	A
11	I-605 Southbound Ramps/Los Angeles Street	0.788	C	0.796	C
12	I-605 Northbound Ramps/Los Angeles Street	0.913	**E**	0.916	**E**
13	Little John Street/Los Angeles Street	0.578	A	0.748	C

LOS = Level of Service

V/C= Volume to Capacity Ratio

**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Eight of the 13 study intersections are currently operating at LOS D or better during the weekday a.m. and p.m. peak hours. The following intersections operate at LOS E or F during one or both peak periods:

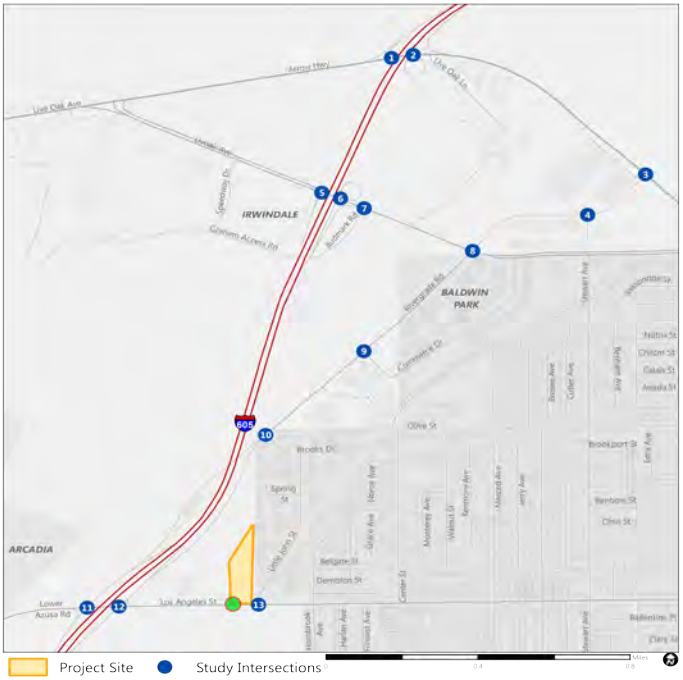
- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Northbound Ramps/Los Angeles Street

The existing traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 4. The existing traffic analysis scenario worksheets are provided in Appendix C.

FIGURE 3

13131 Los Angeles Street EIR

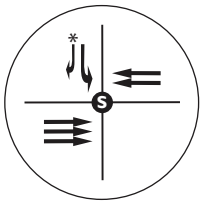
Existing Lane Configurations



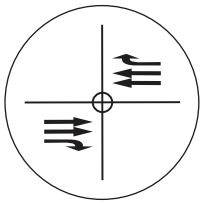
LANE CONFIGURATION

- Signalized Intersection
- Intersection Lane Geometry
- Stop Sign Controlled Intersection
- Stop Sign Location
- Uncontrolled, right-turn only

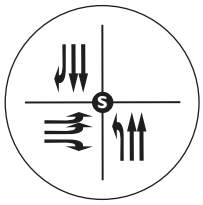
1 I-605 SB Off-ramp & Arrow Highway



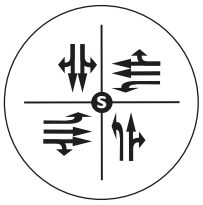
2 I-605 NB On-ramps & Arrow Highway



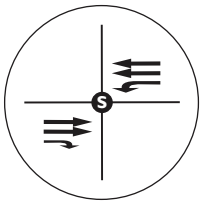
3 Arrow Highway & Rivergrade Road



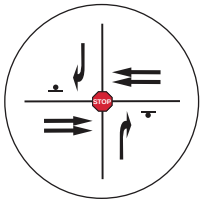
4 Stewart Avenue & Rivergrade Road



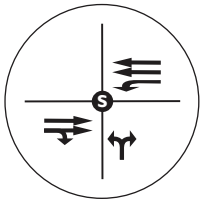
5 I-605 SB On-ramp & Live Oak Avenue



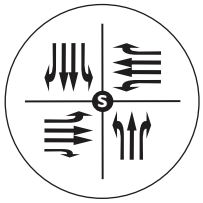
6 I-605 NB Off-ramps & Live Oak Avenue



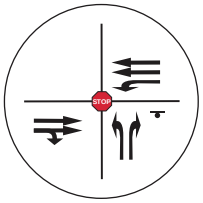
7 Graham Access Road & Live Oak Avenue



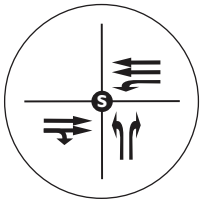
8 Rivergrade Road & Live Oak Avenue



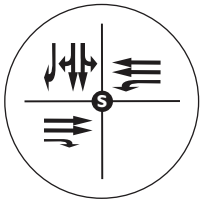
9 Rivergrade Road & Commerce Drive



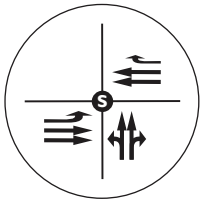
10 Rivergrade Road & Brooks Drive



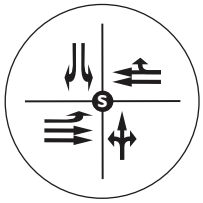
11 I-605 SB Ramps & Lower Azusa Road



12 I-605 NB Ramps & Los Angeles Street



13 Littlejohn Street & Los Angeles Street

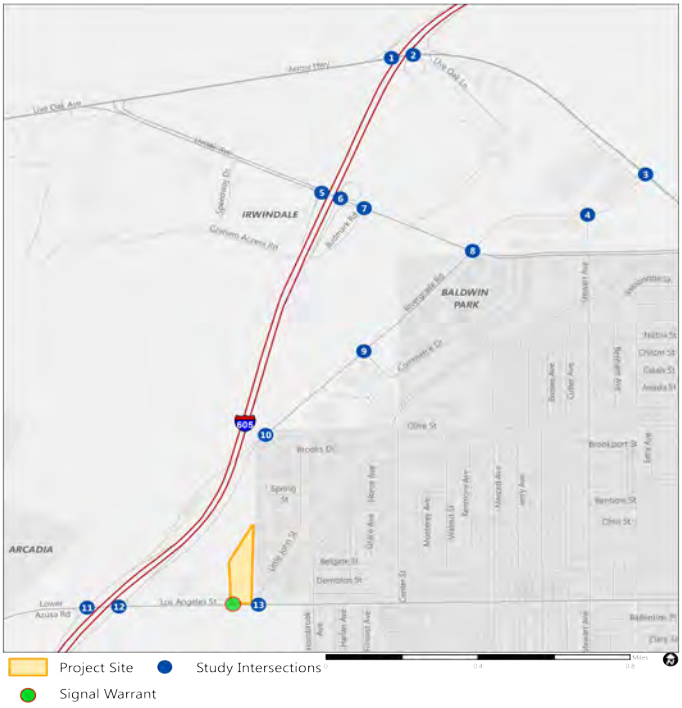


* Small lanes are channelized

FIGURE 4

13131 Los Angeles Street EIR

Existing- AM/PM Peak Hour Traffic Volumes



xx/xx AM/PM turning movement volumes

1 I-605 Southbound Off-ramp/Arrow Highway

844 / 347
499 / 269
1586 / 477
Signalized
695 / 1400

2 I-605 Northbound On-ramp/Arrow Highway

399 / 256
1691 / 441
Unsignalized
735 / 1382
334 / 140

3 Arrow Highway/ Rivergrade Road

334 / 225
501 / 1326
Signalized
333 / 225
12 / 27
140 / 46
1624 / 491

4 Stewart Avenue/ Rivergrade Road

15 / 25
9 / 14
14 / 21
15 / 16
365 / 64
106 / 192
Signalized
33 / 21
227 / 164
17 / 45
2 / 5
8 / 4
112 / 71

5 I-605 Southbound On-ramp/Live Oak Avenue

1430 / 996
639 / 545
Signalized
321 / 1038
541 / 1274

6 I-605 Northbound Off-ramps/Live Oak Avenue

613 / 596
1378 / 959
Two-way Stop
374 / 1037
655 / 660

7 Graham Access Road/ Live Oak Avenue

1390 / 937
19 / 9
Signalized
796 / 1675
123 / 22
101 / 22
75 / 14

8 Rivergrade Road/Live Oak Avenue

52 / 78
300 / 29
19 / 24
19 / 29
1128 / 663
313 / 109
Signalized
86 / 42
663 / 1568
118 / 28
61 / 164
146 / 156
183 / 552

9 Rivergrade Road/Commerce Drive

705 / 214
20 / 5
9 / 53
85 / 121
Two-way Stop
454 / 715
103 / 27

10 Rivergrade Road/Brooks Avenue

474 / 386
126 / 81
138 / 98
57 / 78
Signalized
561 / 459
77 / 12

11 I-605 Southbound Ramps/Los Angeles Street

511 / 286
314 / 324
89 / 135
913 / 716
422 / 255
Signalized
498 / 1185
357 / 501

12 I-605 Northbound Ramps/Los Angeles Street

155 / 63
899 / 477
Signalized
311 / 280
380 / 1030
384 / 501
453 / 300
207 / 738

13 Little John Street/Los Angeles Street

23 / 74
23 / 146
191 / 15
958 / 477
Signalized
54 / 22
542 / 1738
78 / 1
18 / 0
0 / 3

3. PROJECT TRAFFIC

This section defines the traffic that would be generated by the proposed Project in a three-step process including trip generation, trip distribution and trip assignment.

3.1 PROJECT TRIP GENERATION

The proposed Project land use would be an industrial use with 525,000 square feet of total interior floor area. The trip generation of the project was calculated using nationally-accepted rates defined by the Institute of Transportation Engineers (ITE) –*Trip Generation (10th edition)*. The light industrial rate is the highest rate in the larger industrial land use category within the ITE reference, and therefore the application of that rate is more conservative.

Given the site's industrial nature, the trip generation total distinguished between truck trips and passenger car/small commercial vehicle trips. The truck trip percentages (including the breakdown of trucks by number of axles) were taken from a 2003 Truck Trip Generation study conducted by the city of Fontana. Passenger Car Equivalent Rates were applied to the different truck axle categories to determine the amount of passenger car traffic equal to the generated truck traffic (given the trucks' larger size). The passenger car equivalent trips were added to the passenger car/small commercial vehicle trip total to derive the aggregate trip generation.

Credits for a former use at the site were then subtracted from the aggregate trip generation, as the site could potentially be used again with a similar use under current conditions. Information on the previous site use was compiled by the City of Irwindale, and as the use had primarily outdoor operations, floor area calculations would not be accurate. The number of employees that had been assigned to that operation was defined, and served as the basis for trip generation of the previous use. The resulting trip generation calculations were applied as a credit.

The trip generation analysis is provided in Table 5 (on the following page). The proposed Project would generate 3,210 daily trips, including 450 vehicle trips during the a.m. peak hour (301 inbound trips and 149 outbound trips) and 406 vehicle trips during the p.m. peak hour (140 inbound trips and 266 outbound trips).

3.2 PROJECT TRIP DISTRIBUTION

Trip distribution is the process of assigning the directions from which traffic will access the Project site. Trip distribution is dependent upon the land use characteristics of the Project, the local roadway network, and the general locations of other land uses to which Project trips would originate or terminate. Figure 5 illustrates the trip distribution percentages at the study intersections that were used for the traffic impact analysis.

3.3 PROJECT TRIP ASSIGNMENT

Based on the trip generation and distribution assumptions described above, Project traffic was assigned to the roadway system. Figure 6 illustrates the assigned Project trips for the analyzed weekday a.m. and p.m. peak hours.

Table 5 – Project Vehicle Trip Generation

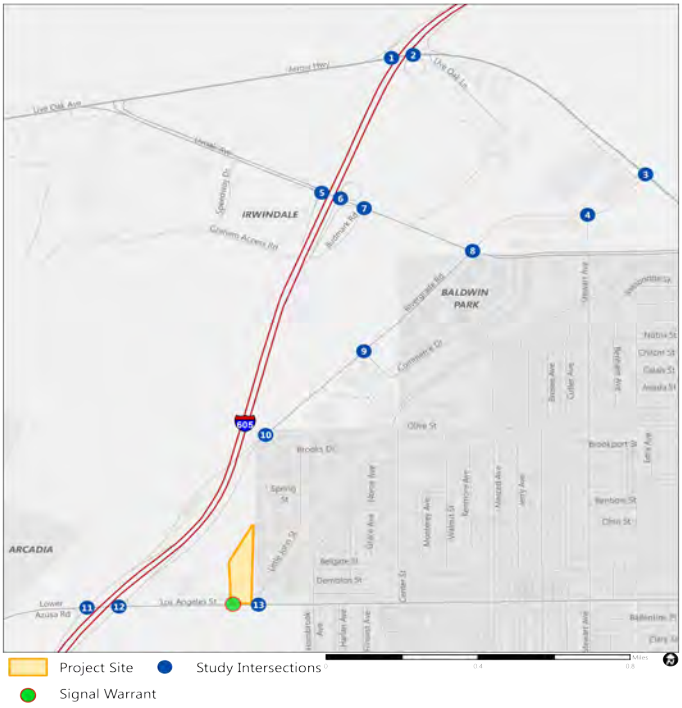
ITE Code	Land Use	Intensity	Units	Weekday						
				Daily	AM Peak Hour			PM Peak Hour		
				Total	Total	In	Out	Total	In	Out
Trip Generation Rates [1]										
110	General Light Industrial, Total	-	KSF	4.96	0.70			0.63		
140	Manufacturing, Total	-	Employees	2.47	0.37	74%	26%	0.33	39%	61%
Trip Generation Totals-New Use										
110	General Light Industrial, Total	525.000	KSF	2,604	368			331		
Trip Generation Rates Trucks [2]										
110	General Light Industrial, 2-axle trucks	-	Proportion[1]	0.08	0.08	38%	63%	0.08	67%	33%
110	General Light Industrial, 3-axle trucks	-		0.039	0.039	38%	63%	0.039	67%	33%
110	General Light Industrial, 4+-axle trucks	-		0.095	0.095	38%	63%	0.095	67%	33%
Truck Trips Non-Factored, Removed										
110	General Light Industrial, 2-axle trucks	525.000	KSF	208	29	11	18	26	17	9
110	General Light Industrial, 3-axle trucks	525.000	KSF	102	14	5	9	13	9	4
110	General Light Industrial, 4+-axle trucks	525.000	KSF	247	35	13	22	31	21	10
Truck Trips-Passenger Car Equivalents, Added										
110	General Light Industrial, 2-axle trucks	525.000	KSF	416	58	22	36	52	35	17
110	General Light Industrial, 3-axle trucks	525.000	KSF	255	35	13	22	33	22	11
110	General Light Industrial, 4+-axle trucks	525.000	KSF	741	105	39	66	93	62	31
Trip Generation Rates-Passenger and Small Commercial Vehicles										
110	General Light Industrial, Total	0.000	KSF	See above	See above	88%	12%	See above	13%	87%
Passenger Car and Small Commercial Vehicle Trips Subtotal										
110	General Light Industrial, Total	525.000	KSF	2,047	290	255	35	261	34	227
Gross Project Total		**525.000**		**3,459**	**488**	**329**	**158**	**439**	**153**	**286**
Trip Generation Totals Subtracted for Net Total -Former Use										
140	Manufacturing	101	Employees	249	38	28	10	33	13	20
Net Project Total		**525.000**		**3,210**	**450**	**301**	**149**	**406**	**140**	**266**

Passenger Car Equivalent factors applied were 2.0 for 2 axle trucks, 2.5 for 3-axle trucks and 3.00 for 4+ axle trucks.
1. Total Peak hour and Daily trip generation and passenger/small commercial category entry and exit percentages derived from 10th Edition ITE Trip Generation Manual.
2. Applies truck percentages of total traffic taken from City of Fontana Truck Trip Generation Study, Dated August 2003.

FIGURE 5

13131 Los Angeles Street EIR

Project Trip Distribution



xx% Project Trip Distribution

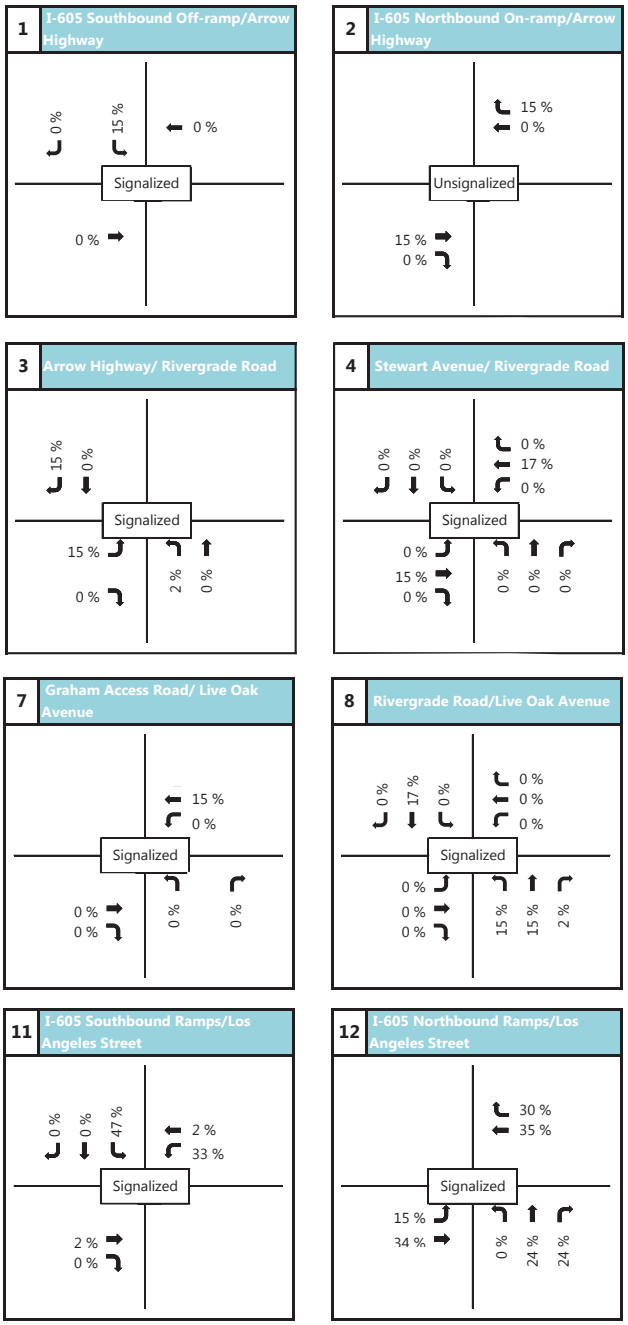
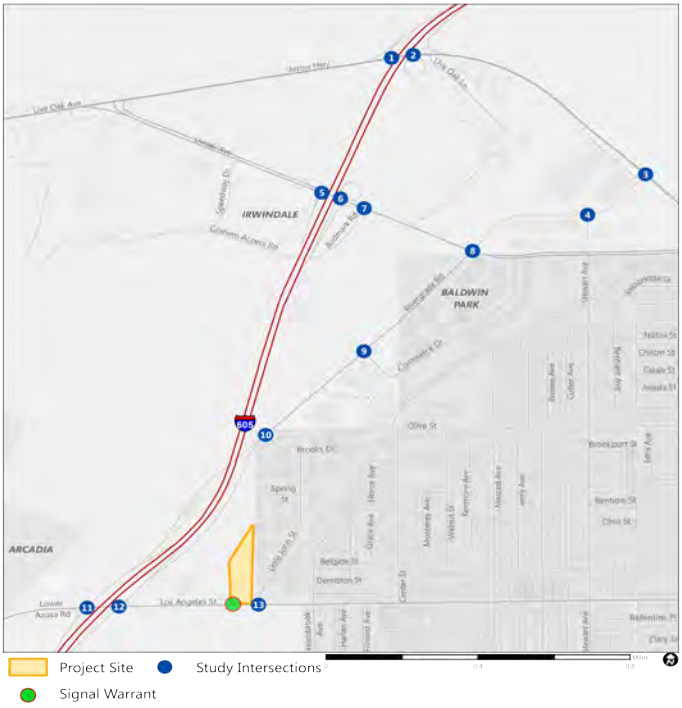


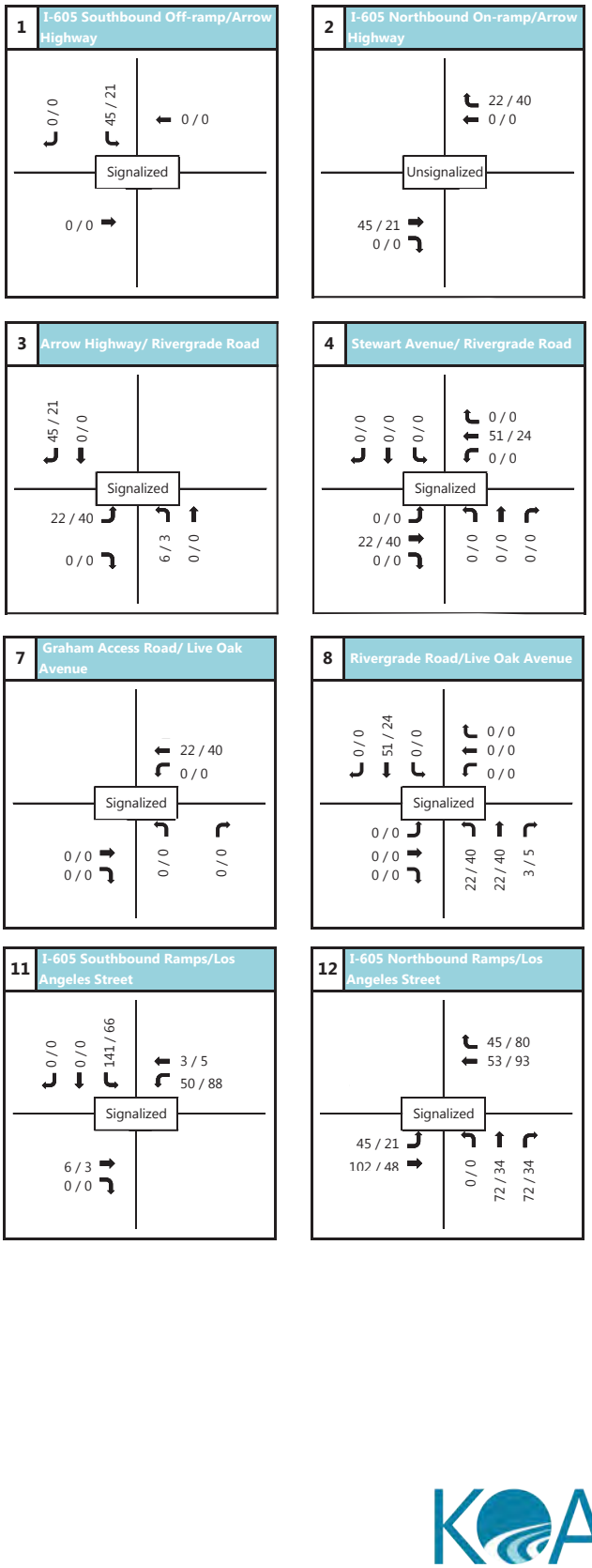
FIGURE 6

13131 Los Angeles Street EIR

Project Trip Assignment - AM/PM Peak Hour



xx/xx AM/PM turning movement volumes



4. EXISTING WITH PROJECT CONDITIONS

This section documents existing traffic conditions at the study intersections with the addition of Project-generated traffic. Traffic volumes for these conditions were derived by adding Project trips to the existing traffic volumes.

Table 6 summarizes the resulting V/C, Vehicle Delay and LOS values at the study intersections for the existing with-Project conditions. The traffic analysis worksheets for this scenario are provided in Appendix D of this report.

Table 6 – Study Intersection Existing With-Project Conditions

	Study Intersections	Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.134	**F**	0.620	B
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.730	C	0.639	B
4	Stewart Avenue/ Rivergrade Road	0.350	A	0.369	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.862	D	1.273	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	1129.3	**F**	606.9	**F**
7	Graham Access Road/ Live Oak Avenue	0.662	B	0.670	B
8	Rivergrade Road/Live Oak Avenue	0.679	B	0.964	**E**
9	Rivergrade Road/Commerce Drive*	27.4	D	30.8	D
10	Rivergrade Road/Brooks Avenue	0.490	A	0.397	A
11	I-605 Southbound Ramps/Los Angeles Street	0.849	D	0.866	D
12	I-605 Northbound Ramps/Los Angeles Street	1.002	**F**	0.980	**E**
13	Little John Street/Los Angeles Street	0.581	A	0.750	C

LOS = Level of Service

V/C= Volume to Capacity Ratio

**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Eight of the 13 study intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours. The following study intersections would operate at LOS values of E or F during either peak period:

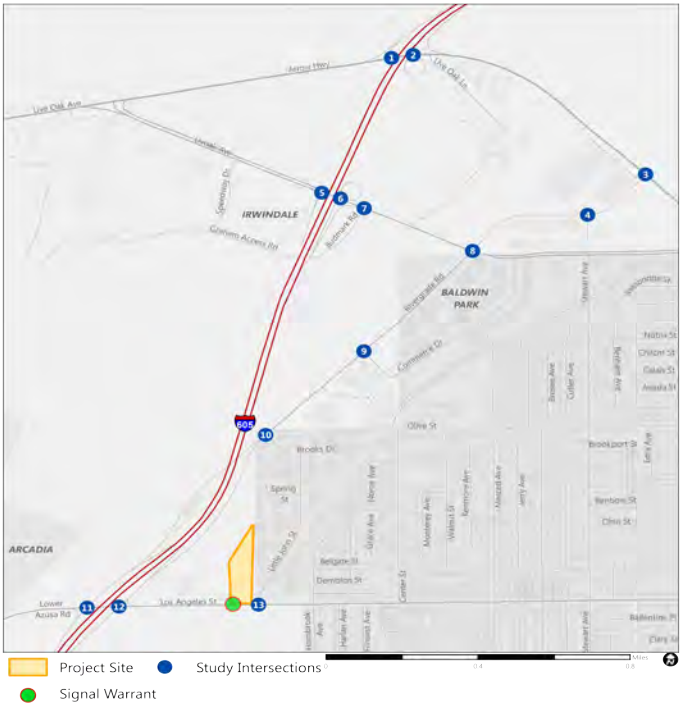
- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Northbound Ramps/Los Angeles Street

The existing with-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated in Figure 7.

FIGURE 7

13131 Los Angeles Street EIR

Existing with Project - AM/PM Peak Hour Traffic Volumes



xx/xx AM/PM turning movement volumes

1 I-605 Southbound Off-ramp/Arrow Highway

844 / 347
544 / 290
1586 / 477
Signalized
695 / 1400

2 I-605 Northbound On-ramp/Arrow Highway

421 / 296
1691 / 441
Unsignalized
780 / 1403
334 / 140

3 Arrow Highway/ Rivergrade Road

379 / 246
501 / 1326
Signalized
355 / 265
12 / 27
146 / 49
1624 / 491

4 Stewart Avenue/ Rivergrade Road

15 / 25
9 / 14
14 / 21
15 / 16
416 / 88
106 / 192
Signalized
33 / 21
249 / 204
17 / 45
2 / 5
8 / 4
112 / 71

5 I-605 Southbound On-ramp/Live Oak Avenue

1430 / 996
661 / 585
Signalized
321 / 1038
541 / 1274

6 I-605 Northbound Off-ramps/Live Oak Avenue

613 / 596
1400 / 999
Two-way Stop
374 / 1037
655 / 660

7 Graham Access Road/ Live Oak Avenue

1412 / 977
19 / 9
Signalized
796 / 1675
123 / 22
101 / 22
75 / 14

8 Rivergrade Road/Live Oak Avenue

52 / 78
351 / 53
19 / 24
19 / 29
1128 / 663
313 / 109
Signalized
86 / 42
663 / 1568
118 / 28
83 / 204
168 / 196
186 / 557

9 Rivergrade Road/Commerce Drive

756 / 238
20 / 5
9 / 53
85 / 121
Two-way Stop
501 / 800
103 / 27

10 Rivergrade Road/Brooks Avenue

525 / 410
126 / 81
138 / 98
57 / 78
Signalized
608 / 544
77 / 12

11 I-605 Southbound Ramps/Los Angeles Street

511 / 286
314 / 324
230 / 201
916 / 721
472 / 343
Signalized
504 / 1188
357 / 501

12 I-605 Northbound Ramps/Los Angeles Street

200 / 143
952 / 570
Signalized
356 / 301
482 / 1078
384 / 501
525 / 334
279 / 772

13 Little John Street/Los Angeles Street

23 / 74
23 / 146
191 / 15
967 / 481
Signalized
54 / 22
546 / 1746
78 / 1
18 / 0
0 / 3

5. FUTURE WITHOUT PROJECT CONDITIONS

This section provides an analysis of future traffic conditions in the study area with area/related project trips and background growth added, but without Project traffic. The proposed Project is anticipated to be completed within the year 2021, and this defines the future analysis year.

5.1 AMBIENT GROWTH

In order to acknowledge regional population and employment growth outside of the study area, an ambient traffic growth rate was applied to the existing traffic counts. An annual growth rate of two percent was used for this analysis.

5.2 AREA PROJECTS

In addition to the application of the ambient traffic growth rate, traffic from related/area projects (approved and pending developments) was included as part of the year-2021 analysis. A total of 22 projects were identified for inclusion in the traffic impact analysis. These include 13 related projects in the City of Irwindale, five related projects in the City of El Monte, and four related projects in the City of Baldwin Park.

Table 8 provides the trip generation estimates for the related/area projects. Their locations are illustrated on Figure 8.

Table 7 – Area Projects Trip Generation Estimate

No.	Project Name	Address	City	Land Use	Intensity	Units	Daily	AM Peak Hour			PM Peak Hour		
								Rate	% In	% Out	Rate	% In	% Out
1	Manning Pit	5175 Vincent Avenue	Irwindale	General Light Industrial	545.735	KSF	2,707	382	336	46	344	45	299
2	The Park @ Live Oak	1200 Arrow Highway	Irwindale	General Light Industrial	1,451.400	KSF	7,199	1,016	894	122	914	119	795
			Irwindale	Shopping Center	98.600	KSF	3,722	93	58	35	376	180	196
3	Panattoni	16203-16233 Arrow Highway	Irwindale	General Light Industrial	130.366	KSF	647	91	80	11	82	11	71
4	Panattoni	242 Live Oak Avenue	Irwindale	General Light Industrial	85.400	KSF	424	60	53	7	54	7	47
5	Ayala Industrial Bldg.	5589 Ayala Avenue	Irwindale	General Light Industrial	80.000	KSF	397	56	49	7	50	7	43
6	Irwindale Med. Clinic	15768 Arrow Highway	Irwindale	Medical/Dental Office	13.300	KSF	463	37	29	8	46	13	33
7	Wendy's Restaurant	15768 Arrow Highway	Irwindale	Fast-Food with Drive-Thru Window	2.300	KSF	1,083	92	47	45	75	39	36
8	Kaiser Med. Office Bldg.	12761 Schabarum Avenue	Irwindale	Medical/Dental Office	90.000	KSF	3,132	250	195	55	311	87	224
9	Reliance II	15990 Foothill Boulevard	Irwindale	General Light Industrial	1,853.000	KSF	9,191	1,297	1,141	156	1,167	152	1,015
			Irwindale	Shopping Center	10.000	KSF	378	9	6	3	38	18	20
10	City of Hope	1500 E. Duarte Road	Irwindale	Medical/Dental Office	108.804	KSF	3,786	302	236	66	376	105	271
11	Tentative Tract Map 82190	2424 & 2428 Mountain Avenue	Irwindale	Single-Family Homes	7.0	Dwelling Units	66	5	1	4	7	4	3
12	Tentative Parcel Map 82188	4826 Baca Avenue	Irwindale	Single-Family Homes	4.0	Dwelling Units	38	3	1	2	4	3	1
13	Tentative Parcel Map 82189	5134 Irwindale Avenue	Irwindale	Single-Family Homes	2.0	Dwelling Units	19	1	0	1	2	1	1
14	22-unit single-family subdivision	4422-4436 Bannister Street	El Monte	Single-Family Homes	22.0	Dwelling Units	208	16	4	12	22	14	8
15	3 new single-family units	5229 Hammill Road	El Monte	Single-Family Homes	3.0	Dwelling Units	28	2	1	1	3	2	1
16	3 2,747 Square foot res units on	11646 Lower Azusa Road	El Monte	Single-Family Homes	3.0	Dwelling Units	28	2	1	1	3	2	1
17	5-unit PUD and one common private	11830 Lambert Avenue	El Monte	Single-Family Homes	5.0	Dwelling Units	47	4	1	3	5	3	2
18	5-detached 2-story res units	11613 Rio Hondo Parkway	El Monte	Single-Family Homes	5.0	Dwelling Units	47	4	1	3	5	3	2
19	23 unit condominiumn	14751 Badillo Street	Baldwin Park	Multifamily Housing (Mid-Rise)	23.0	Dwelling Units	125	8	2	6	10	6	4
20	97,945 sq ft, 10 unit industrial warehouse condominium	5119 Azusa Canyon Rd	Baldwin Park	General Light Industrial	97.945	KSF	486	69	61	8	62	8	54
21	15 single family residential	15138 Nubia Street	Baldwin Park	Single-Family Homes	15.0	Dwelling Units	142	11	3	8	15	9	6
22	5 unit condominium	4232 LA Rica Avenue	Baldwin Park	Multifamily Housing (Low Rise)	5.0	Dwelling Units	37	2	0	2	3	2	1
Total							34,400	3,812	3,200	612	3,974	840	3,134

The related project volumes figures for the weekday a.m. and p.m. peak hours are also provided on Figure 9.

5.3 FUTURE WITHOUT PROJECT INTERSECTION LEVEL OF SERVICE

The future without-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 10.

Table 8 summarizes the V/C, Vehicle Delay and LOS values at the study intersections under this scenario. The traffic analysis worksheets for this scenario are provided in Appendix E of this report.

Table 8 – Study Intersection Future without-Project Conditions

	Study Intersections	Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.365	**F**	0.764	C
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.748	C	0.646	B
4	Stewart Avenue/ Rivergrade Road	0.346	A	0.367	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.935	**E**	1.614	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	3409.4	**F**	1033.8	**F**
7	Graham Access Road/ Live Oak Avenue	0.685	B	0.700	B
8	Rivergrade Road/Live Oak Avenue	0.700	B	1.003	**F**
9	Rivergrade Road/Commerce Drive*	26.0	D	27.5	D
10	Rivergrade Road/Brooks Avenue	0.490	A	0.380	A
11	I-605 Southbound Ramps/Los Angeles Street	0.827	D	0.850	D
12	I-605 Northbound Ramps/Los Angeles Street	0.965	**E**	0.969	**E**
13	Little John Street/Los Angeles Street	0.586	A	0.752	C

LOS = Level of Service

V/C= Volume to Capacity Ratio

**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Eight of the 13 study intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours. The following study intersections would continue to operate at poor LOS values of E or F during either peak period:

- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Northbound Ramps/Los Angeles Street

FIGURE 8

13131 Los Angeles Street EIR

Location of Related Area Projects

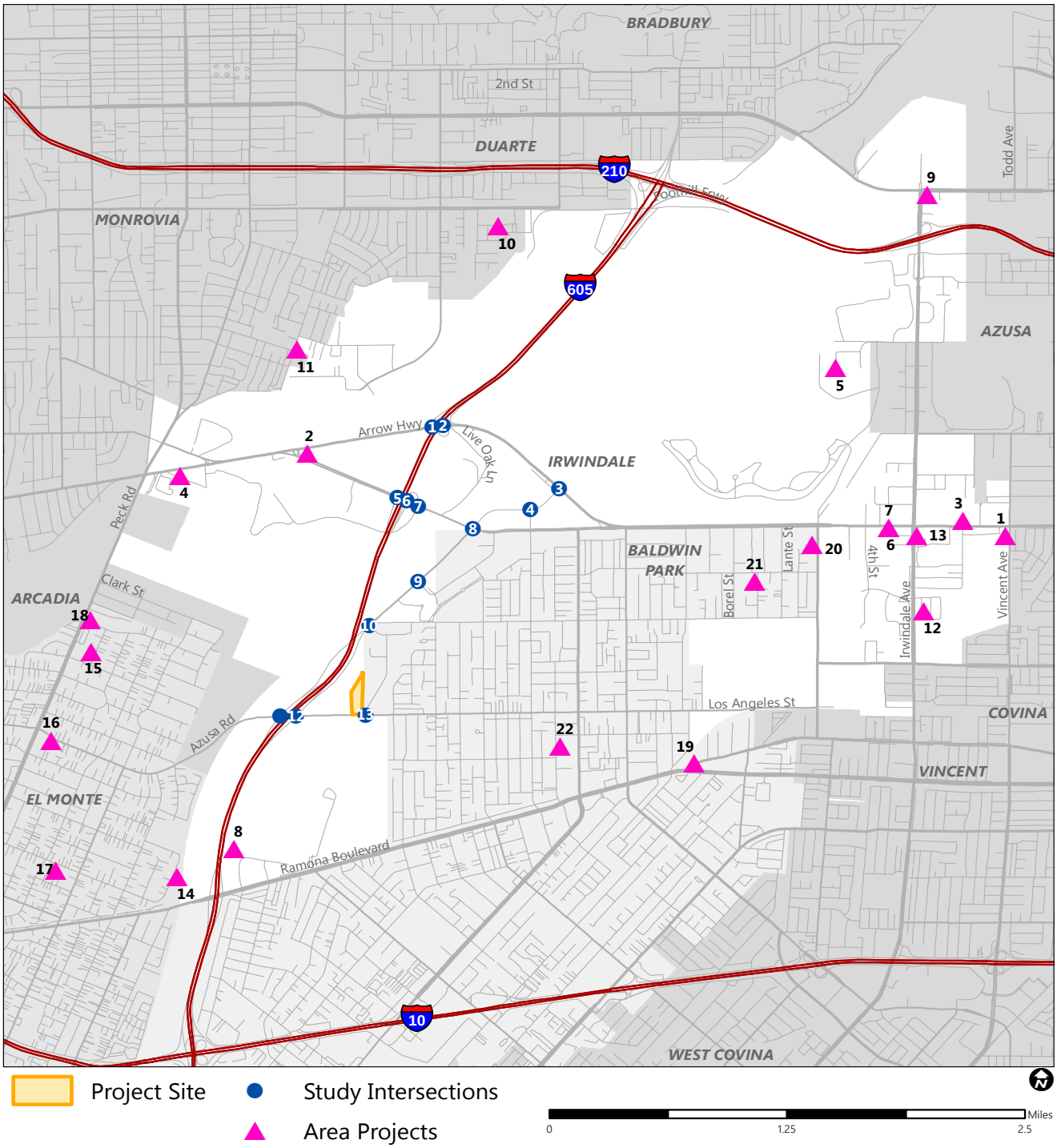
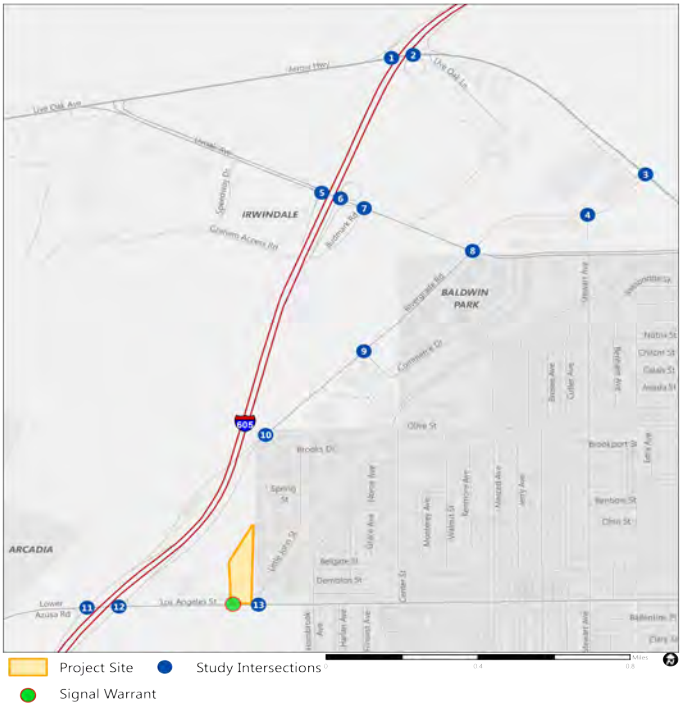


FIGURE 9

13131 Los Angeles Street EIR

Area Projects Trip Assignment - AM/PM Peak Hour



xx/xx AM/PM turning movement volumes

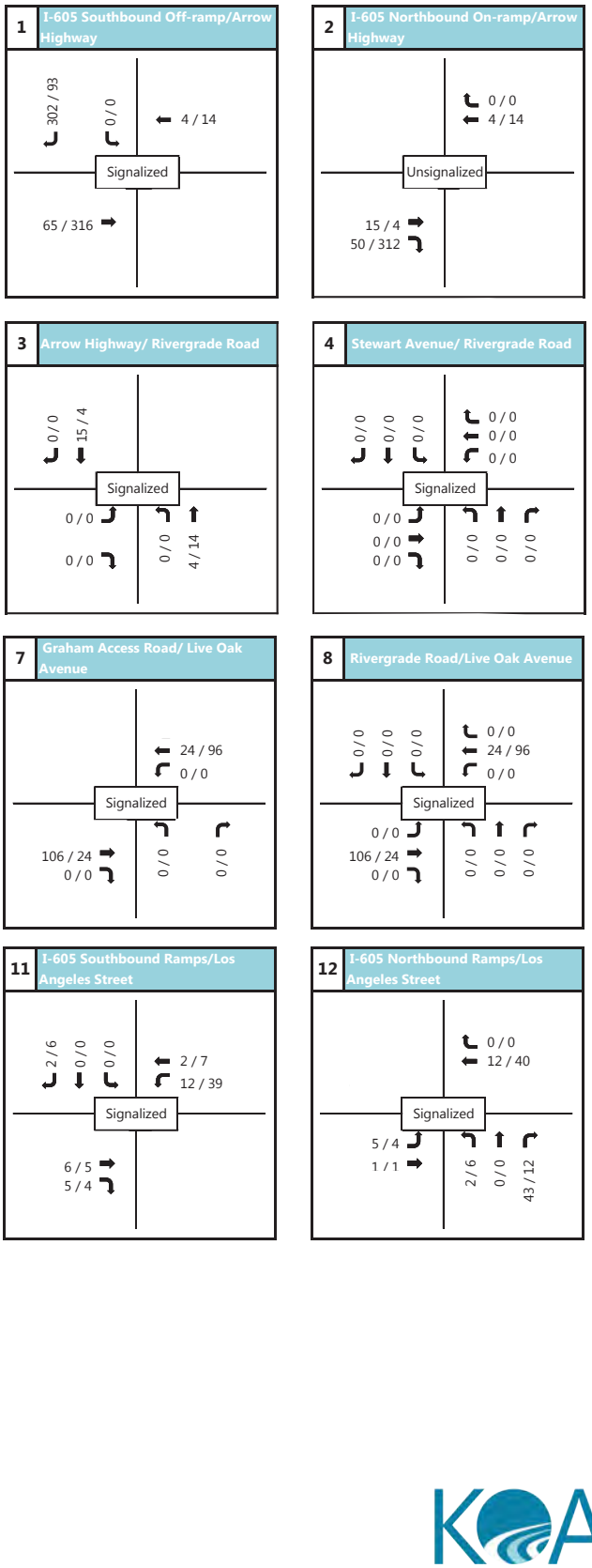
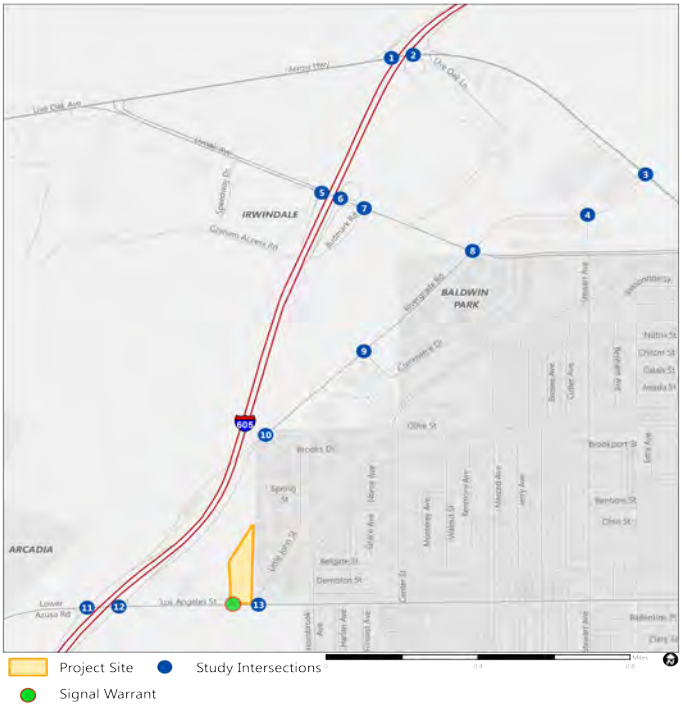


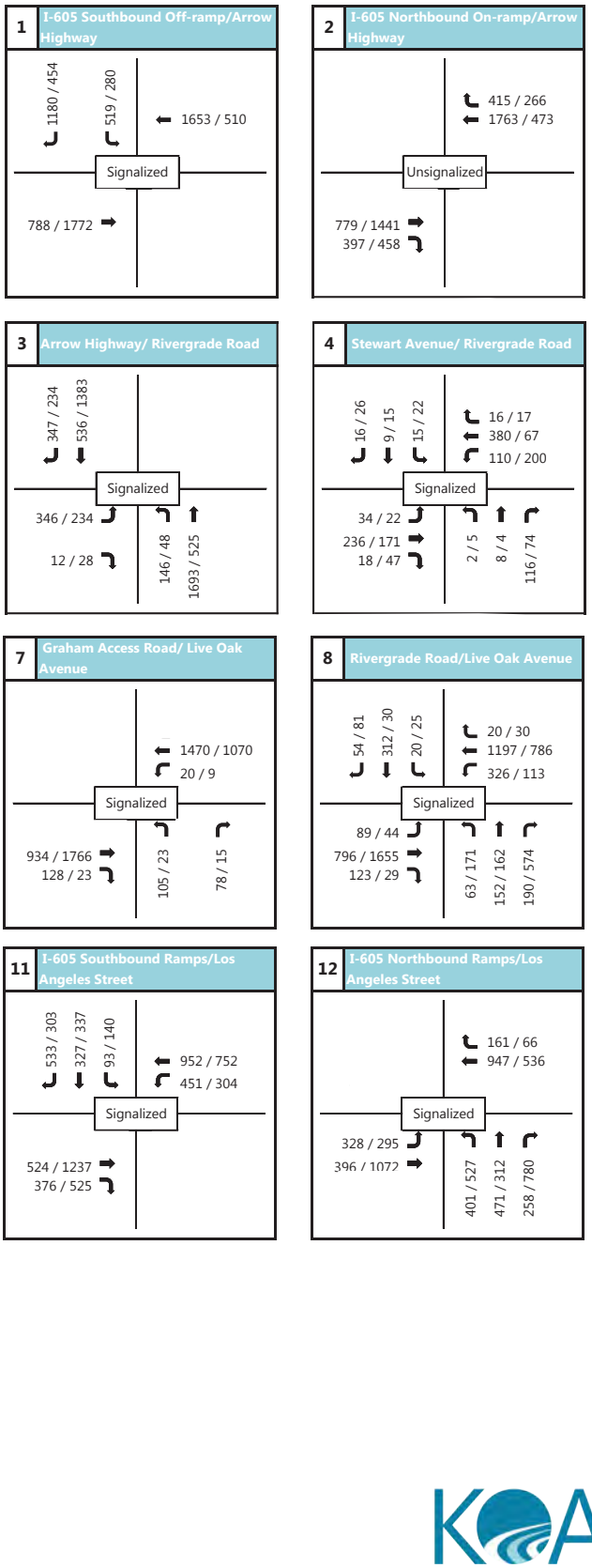
FIGURE 10

13131 Los Angeles Street EIR

Future without Project- AM/PM Peak Hour Traffic Volumes



xx/xx AM/PM turning movement volumes



6. FUTURE WITH PROJECT CONDITIONS

This section documents future traffic conditions at the study intersections with the addition of Project-generated traffic. Traffic volumes for these conditions were derived by adding Project trips to the future without-Project scenario volumes.

Table 9 summarizes the resulting V/C (or delay) and LOS values at the study intersections for the future with-Project traffic conditions. The future with-Project traffic analysis worksheets are provided in Appendix F of this report.

Table 9 – Study Intersection Future with-Project Conditions

	Study Intersections	Weekday AM		Weekday PM	
		V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	1.365	**F**	0.764	C
2	I-605 Northbound On-ramp/Arrow Highway	0.000	-	0.000	-
3	Rivergrade Road/ Arrow Highway	0.755	C	0.661	B
4	Stewart Avenue/ Rivergrade Road	0.359	A	0.379	A
5	I-605 Southbound On-ramp/Live Oak Avenue	0.949	**E**	1.639	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	3496.9	**F**	1119.2	**F**
7	Graham Access Road/ Live Oak Avenue	0.692	B	0.700	B
8	Rivergrade Road/Live Oak Avenue	0.730	C	1.006	**F**
9	Rivergrade Road/Commerce Drive*	29.9	D	34.6	D
10	Rivergrade Road/Brooks Avenue	0.505	A	0.407	A
11	I-605 Southbound Ramps/Los Angeles Street	0.887	D	0.920	**E**
12	I-605 Northbound Ramps/Los Angeles Street	1.055	**F**	1.032	**F**
13	Little John Street/Los Angeles Street	0.589	A	0.755	C

LOS = Level of Service

V/C= Volume to Capacity Ratio

**Stop-controlled intersections analyzed using the Highway Capacity Manual (HCM) delay-based methodology.*

Seven of the 13 study intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours. The following six study intersections would operate at LOS E or F during either peak period:

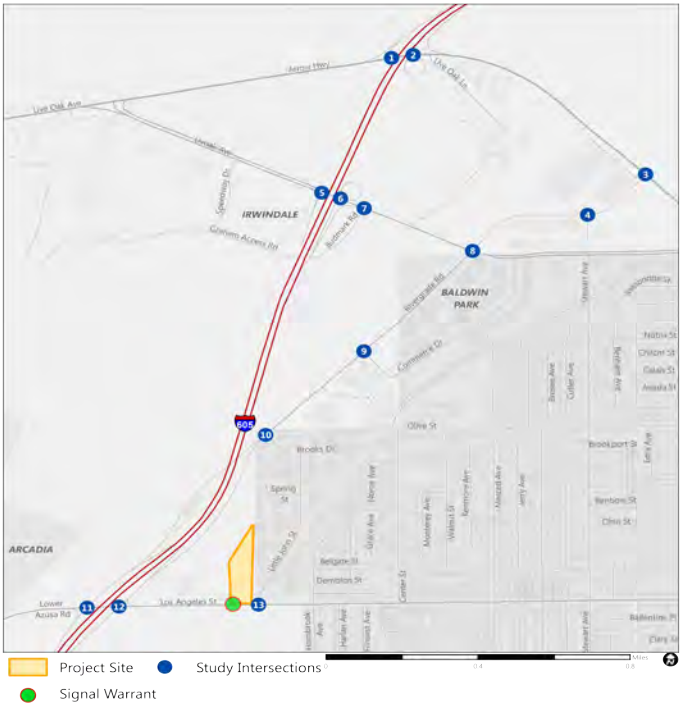
- I-605 Southbound Off-ramp/Arrow Highway
- I-605 Southbound On-ramp/Live Oak Avenue
- I-605 Northbound Off-ramps/Live Oak Avenue
- Rivergrade Road/Live Oak Avenue
- I-605 Southbound Ramps/Los Angeles Street
- I-605 Northbound Ramps/Los Angeles Street

The future with-Project traffic volumes for the weekday a.m. and p.m. peak hours are illustrated on Figure 11.

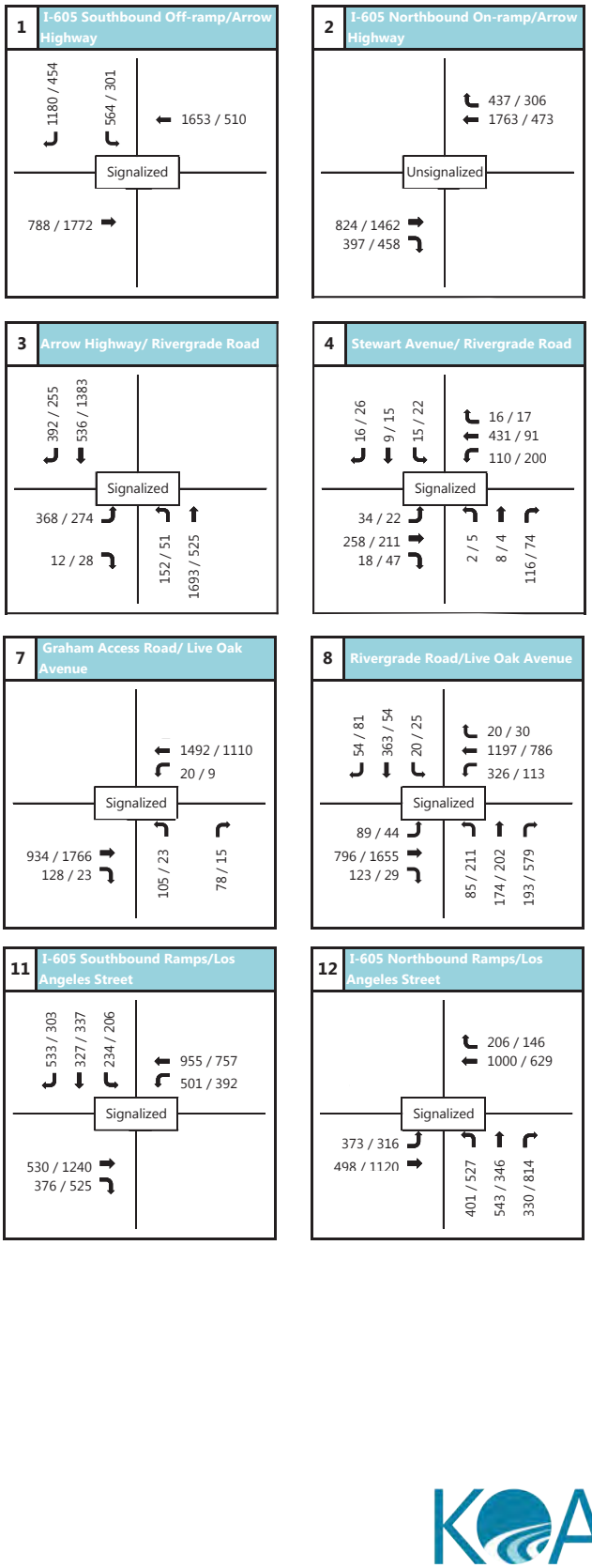
FIGURE 11

13131 Los Angeles Street EIR

Future with Project- AM/PM Peak Hour Traffic Volumes



xx/xx AM/PM turning movement volumes



7. PROJECT TRAFFIC IMPACTS

7.1 DETERMINATION OF TRAFFIC IMPACTS

Traffic impacts are identified if a proposed development will result in a significant change in traffic conditions at a study intersection. A significant impact is typically identified if Project-related traffic will cause service levels to deteriorate beyond a threshold limit specified by the overseeing agency.

The traffic study guidelines of the City of Irwindale define significant impacts based on pre-project levels of service. If an intersection operates at an LOS value of D or lower under existing or future-without-project conditions, an impact occurs where the project causes operations to depreciate to LOS E or F.

When pre-project operations are at LOS E, deterioration of traffic to LOS F, or an increase of the V/C ratio greater than or equal to .02 at signalized intersections, causes a significant impact. When pre-project conditions are at LOS F at a signalized intersection, then the addition of 50 or more project trips causing an increase in the V/C ratio greater than or equal to .02 is considered significant. For un-signalized intersections operating at LOS F in pre-project conditions, the worsening of total control delay to more than four or five seconds per vehicle (for a single- or multi-lane approach), or the addition of 50 or more vehicle trips to an intersection where total control delay already exceeds these values, creates a significant impact.

These thresholds are summarized below.

Pre-project Level of Service	Impact Threshold	
	Signalized Intersections	Un-Signalized Intersections
A through D	LOS E or F	
E	(1). LOS F (2). V/C increase of at least .02	LOS F
F	Addition of more than 50 project trips and an increase in V/C of .02 or greater.	(1). Project trips cause total control delay of minor-street approach to increase to more than 4.0 seconds per vehicle for a single lane approach or 5.0 seconds per vehicle for a multi-lane approach. (2). Addition of more than 50 project trips when total control delay exceeds 4.0 seconds per vehicle (for single-lane approach) or 5.0 seconds per vehicle (for multi-lane approach).

V/C= Volume-to-Capacity Ratio

Source: Irwindale Traffic Study Guidelines, August 2014

7.2 PROJECT TRAFFIC IMPACTS – EXISTING PLUS PROJECT

Table 10 provides a summary of the Project impacts under existing conditions. Traffic impacts created by the proposed Project were determined by comparing the existing scenario conditions to the existing with-Project scenario conditions.

The proposed Project would create significant traffic impacts at the following study intersection:

- 12. I-605 Northbound Ramps/Los Angeles Street

Table 10 – Determination of Project Impacts – Existing plus-Project Conditions

	Study Intersections	Peak Hour	Existing (2018) Condition V/C or Delay	Existing (2018) Condition LOS	Existing (2018) + Project V/C or Delay	Existing (2018) + Project LOS	Change in V/C or Delay	Added Project Trips	Sig Impact?
1	I-605 Southbound Off-ramp/Arrow Highway	Weekday AM	1.134	F	1.134	F	-	45	No
		Weekday PM	0.620	B	0.620	B	-	21	No
2	I-605 Northbound On-ramp/Arrow Highway	Weekday AM	0.000	-	0.000	-	-	67	No
		Weekday PM	0.000	-	0.000	-	-	61	No
3	Rivergrade Road/ Arrow Highway	Weekday AM	0.723	C	0.730	C	0.007	73	No
		Weekday PM	0.625	B	0.639	B	0.014	64	No
4	Stewart Avenue/ Rivergrade Road	Weekday AM	0.337	A	0.350	A	0.013	73	No
		Weekday PM	0.356	A	0.369	A	0.013	64	No
5	I-605 Southbound On-ramp/Live Oak Avenue	Weekday AM	0.849	D	0.862	D	0.013	22	No
		Weekday PM	1.248	F	1.273	F	0.025	40	No
6	I-605 Northbound Off-ramps/Live Oak Avenue*	Weekday AM	1081.6	F	1129.3	F	47.700	22	No
		Weekday PM	606.9	F	606.9	F	-	40	No
7	Graham Access Road/ Live Oak Avenue	Weekday AM	0.655	B	0.662	B	0.007	22	No
		Weekday PM	0.670	B	0.670	B	-	40	No
8	Rivergrade Road/Live Oak Avenue	Weekday AM	0.649	B	0.679	B	0.030	98	No
		Weekday PM	0.961	E	0.964	E	0.003	109	No
9	Rivergrade Road/Commerce Drive*	Weekday AM	24.1	C	27.4	D	3.3	98	No
		Weekday PM	25.1	D	30.8	D	5.7	109	No
10	Rivergrade Road/Brooks Avenue	Weekday AM	0.475	A	0.490	A	0.015	98	No
		Weekday PM	0.370	A	0.397	A	0.027	109	No
11	I-605 Southbound Ramps/Los Angeles Street	Weekday AM	0.788	C	0.849	D	0.061	200	No
		Weekday PM	0.796	C	0.866	D	0.070	162	No
12	I-605 Northbound Ramps/Los Angeles Street	Weekday AM	0.913	E	1.002	F	0.089	389	Yes
		Weekday PM	0.916	E	0.980	E	0.064	310	Yes
13	Little John Street/Los Angeles Street	Weekday AM	0.578	A	0.581	A	0.003	13	No
		Weekday PM	0.748	C	0.750	C	0.002	12	No

LOS = Level of Service

**Two-way stop intersection, with analysis based on HCM methodology. Values denote vehicle delay in seconds*

The evaluation of the control delay significance threshold for un-signalized intersections, under existing with project conditions, is provided in Table 11.

Table 11 – Worst-Approach Control Delay (Seconds per Vehicle), Existing plus Project Scenario

	Intersections	Peak Hour	Vehicles on Worst Approach	Worst-Approach Delay	Delay (seconds) per Vehicle	Significance Threshold (seconds)	Exceeds Threshold?
6	I-605 Northbound Off-ramps/Live Oak Avenue*	AM	613	1,129.3	1.8	4.0	No
		PM	660	606.9	0.9		No
9	Rivergrade Road/Commerce Drive*	AM	94	25.8	0.3	5.0	No
		PM	174	25.0	0.1		No

7.3 PROJECT TRAFFIC IMPACTS – FUTURE WITH PROJECT

Table 12 provides a summary of the Project impacts under future conditions. Traffic impacts created by the Project were determined by comparing the future without-Project conditions to the future with-Project conditions.

The proposed Project would create significant peak-hour traffic impacts at two of the 13 study intersections:

- 11. I-605 Southbound Ramps/Los Angeles Street
- 12. I-605 Northbound Ramps/Los Angeles Street

Table 12 – Determination of Project Impacts – Future with-Project Conditions

Study Intersections		Peak Hour	Future (2020) No Project V/C or Delay	Future (2020) No Project LOS	Future (2020) With Project V/C or Delay	Future (2020) With Project LOS	Change in V/C	Added Project Trips	Sig Impact?
1	I-605 Southbound Off-ramp/Arrow Highway	Weekday AM	1.365	F	1.365	F	-	45	No
		Weekday PM	0.764	C	0.764	C	-	21	No
2	I-605 Northbound On-ramp/Arrow Highway	Weekday AM	0.000	-	0.000	-	-	67	No
		Weekday PM	0.000	-	0.000	-	-	61	No
3	Rivergrade Road/ Arrow Highway	Weekday AM	0.748	C	0.755	C	0.007	73	No
		Weekday PM	0.646	B	0.661	B	0.015	64	No
4	Stewart Avenue/ Rivergrade Road	Weekday AM	0.346	A	0.359	A	0.013	73	No
		Weekday PM	0.367	A	0.379	A	0.012	64	No
5	I-605 Southbound On-ramp/Live Oak Avenue	Weekday AM	0.935	E	0.949	E	0.014	22	No
		Weekday PM	1.614	F	1.639	F	0.025	40	No
6	I-605 Northbound Off-ramps/Live Oak Avenue*	Weekday AM	3409.4	F	3496.9	F	87.5	22	No
		Weekday PM	1033.8	F	1119.2	F	85.4	40	No
7	Graham Access Road/ Live Oak Avenue	Weekday AM	0.685	B	0.692	B	0.007	22	No
		Weekday PM	0.700	B	0.700	B	-	40	No
8	Rivergrade Road/Live Oak Avenue	Weekday AM	0.700	B	0.730	C	0.030	98	No
		Weekday PM	1.003	F	1.006	F	0.003	109	No
9	Rivergrade Road/Commerce Drive*	Weekday AM	26.0	D	29.9	D	3.9	98	No
		Weekday PM	27.5	D	34.6	D	7.1	109	No
10	Rivergrade Road/Brooks Avenue	Weekday AM	0.490	A	0.505	A	0.015	98	No
		Weekday PM	0.380	A	0.407	A	0.027	109	No
11	I-605 Southbound Ramps/Los Angeles Street	Weekday AM	0.827	D	0.887	D	0.060	200	No
		Weekday PM	0.850	D	0.920	E	0.070	162	**Yes**
12	I-605 Northbound Ramps/Los Angeles Street	Weekday AM	0.965	E	1.055	F	0.090	389	**Yes**
		Weekday PM	0.969	E	1.032	F	0.063	310	**Yes**
13	Little John Street/Los Angeles Street	Weekday AM	0.586	A	0.589	A	0.003	13	No
		Weekday PM	0.752	C	0.755	C	0.003	12	No

LOS = Level of Service

**Two-way stop intersection, with analysis based on HCM methodology. Values denote vehicle delay in seconds*

The evaluation of the control delay significance threshold for un-signalized intersections, under existing with project conditions, is provided in Table 11

Table 13 – Worst-Approach Control Delay (Seconds per Vehicle), Future plus Project Scenario

Intersections		Peak Hour	Vehicles on Worst Approach	Worst-Approach Delay	Delay (seconds) per Vehicle	Significance Threshold (seconds)	Exceeds Threshold?
6	I-605 Northbound Off-ramps/Live Oak Avenue	AM	1052	3,496.9	3.3	4.0	No
		PM	749	1,119.2	1.5		No
9	Rivergrade Road/Commerce Drive	AM	97	28.1	0.3	5.0	No
		PM	181	27.7	0.2		No

7.4 INTERSECTION MITIGATION MEASURES ANALYSIS

For the significantly-impacted intersections, potential mitigation measures were analyzed. These locations are both located within the same interchange, and are intersections of Los Angeles Street and I-605 freeway off-ramps.

It was determined from a review of geometric details and traffic controls at these locations that the best mitigation measures would be the addition of lanes to the freeway off-ramps at both locations. These improvements would require widening of the off-ramp facilities. At the southbound off-ramp location, intersection 11, the recommended mitigation measure is an added left-turn lane at the ramp approach. At the northbound off-ramp location, intersection 12, the recommended mitigation measure is an added right-turn lane at the ramp approach.

The effects of these mitigation measures on impact significance is reviewed in table 14 (existing plus-Project conditions) and Table 15 (future with-Project conditions).

Fair-share improvement percentages for the significantly-impacted intersections are reviewed in the next report sub-section.

Table 14 – Mitigation Measure Analysis–
Existing plus-Project Conditions

Study Intersections		Peak Hour	Existing (2018) Condition		Existing (2018) + Project + Mitig		Change in V/C	Sig Impact?
			V/C or Delay	LOS	V/C or Delay	LOS		
12	I-605 Northbound Ramps/Los Angeles Street	Weekday AM	0.913	**E**	0.915	**E**	0.002	No
		Weekday PM	0.916	**E**	0.812	D	-0.104	No

Table 15 – Mitigation Measure Analysis–
Future with-Project Conditions

Study Intersections		Peak Hour	Future (2020) No Project		Future (2018) + Project + Mitig		Change in V/C	Sig Impact?
			V/C or Delay	LOS	V/C or Delay	LOS		
11	I-605 Southbound Ramps/Los Angeles Street	Weekday AM	0.827	D	0.838	D	0.011	No
		Weekday PM	0.850	D	0.877	D	0.027	No
12	I-605 Northbound Ramps/Los Angeles Street	Weekday AM	0.965	**E**	0.952	**E**	-0.013	No
		Weekday PM	0.969	**E**	0.857	D	-0.112	No

The analyzed mitigation measures would fully mitigate the identified impacts at both study intersections, under both existing plus-Project and future with-Project conditions.

7.5 FAIR-SHARE VOLUME ANALYSIS

City of Irwindale traffic study guidelines require a fair-share volume analysis at significantly-impacted study locations. The identified Project significant impacts occur at the two intersections of Los Angeles Street with the I-605 freeway ramps. The fair-share percentages for these locations were based on the following formula within the guidelines:

project volumes/existing with-project volumes

The volumes used for this calculation are peak-hour, and both the AM and PM peak conditions were analyzed. The fair-share percentages for the two intersections for both peak hours are as follows:

I-605 Southbound Ramps/Los Angeles Street

- AM peak hour: 200 project trips / 3,304 existing with-project trips = 6.1 percent
- PM peak hour: 162 project trips / 3,564 existing with-project trips = 4.6 percent

I-605 Northbound Ramps/Los Angeles Street

- AM peak hour: 389 project trips / 3,178 existing with-project trips = 12.2 percent
- PM peak hour: 310 project trips / 3,699 existing with-project trips = 8.4 percent

7.6 DRIVEWAY SIGNAL WARRANT FOR FUTURE WITH PROJECT CONDITIONS

A traffic signal warrant analysis was conducted at the intersection of the main Project site driveway with Los Angeles Street. A warrant analysis, determines if requirements would be met for a new traffic signal. The analysis was based on that prescribed by the Manual on Uniform Traffic Control Devices (MUTCD), published by the Federal Highway Administration and amended for use in California by Caltrans.

The analyzed post-Project peak-hour traffic volumes from the trip generation and distribution analysis were applied to the driveway inbound and outbound volumes, and analyzed volumes from the nearby Little John intersections were applied to the eastbound and westbound traffic flows on Los Angeles Street.

Inputs to the analysis included the roadway lane configurations and post-project vehicle turning movement volumes. The following signal warrant guideline defines the minimum criteria for the potential installation of a traffic control signal based on peak-hour volumes.

- Warrant 3 - Peak Hour Volume – Determine that for one hour of the day minor street traffic operates with undue delay in entering or crossing the major street. Part A - Total volume and vehicle hours of delay on the minor approach. Part B – Peak-hour volumes of both approaches of the major street and highest approach of the minor street. Warrant 3 is met if Part A or Part B is met.

As the MUTCD recommends that engineering judgment be considered, the City engineer would make the final determination on the traffic control change, whether warrants are met or not.

For post-project conditions, the peak-hour volumes along Los Angeles Street are 1,894 vehicles during the weekday AM peak hour and 2,450 vehicles during the PM peak hour. The driveway volume would be 102 vehicles in the AM peak hour and 181 vehicles in the PM peak hour.

Based on the analyzed data, Part A would not be satisfied (as the number of vehicle-hours of minor approach delay falls below the threshold). However, the peak-hour volumes indicated on the chart (Part B) would be satisfied, as the a.m. and p.m. peak-hour points fall above the minimum threshold curve. Therefore, the peak-hour volume warrant would be satisfied at this location under post-Project conditions.

The warrant worksheets and graph for this study intersection is provided in Appendix L.

8. CONGESTION MANAGEMENT PROGRAM AND FREEWAY FACILITY IMPACTS

This section demonstrates the ways in which this traffic study was prepared to be in conformance with the procedures mandated by the County of Los Angeles Congestion Management Program (CMP). An analysis was also conducted of potential freeway impacts per Caltrans impact standards.

The CMP was created statewide because of Proposition 111 and was implemented locally by the Los Angeles County Metropolitan Transportation Authority (Metro). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potentially regional significance be analyzed. A specific system of arterial roadways plus all freeways comprises the CMP system. Per CMP Transportation Impact Analysis (TIA) Guidelines, a traffic impact analysis is conducted where:

- At CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed Project will add 50 or more vehicle trips during either a.m. or p.m. weekday peak hours.

- At CMP mainline freeway-monitoring locations, where the Project will add 150 or more trips, in either direction, during the either the a.m. or p.m. weekday peak hours.

8.1 POTENTIAL CMP ARTERIAL IMPACTS

The nearest CMP arterial to the project site is Azusa Avenue, which is over four miles east of the Project site. The CMP intersections of Azusa Avenue and Arrow Highway and Azusa Avenue and Workman Avenue are located at a distance of 4.5 miles to the northeast and southeast of the Project site:

- CM ID 14 – Azusa Avenue and Arrow Highway
- CMP ID 159 – Azusa Avenue and Workman Avenue

The Project trip assignment analysis indicated that no more than 11 project trips are expected to travel to/from the Project site along arterial roadways to the east. Therefore, neither of the arterial monitoring stations requires additional CMP impact analysis.

8.2 POTENTIAL FREEWAY IMPACTS

The State of California Department of Transportation (Caltrans) publishes guidelines on the calculations of potential impacts to state facilities from planned development projects. The I-10 (San Bernardino Freeway), I-210 (Foothill Freeway) and I-605 (San Gabriel Valley Freeway) are CMP freeway routes maintained by Caltrans within or near to the Project study area. Analysis is presented here based on both CMP and Caltrans traffic impact guidelines.

<u>Freeway Mainline Analysis – CMP Guidelines</u>

The Project percentage share of freeway mainline traffic volumes is analyzed within this report sub-section. Based on the incremental Project trip generation and distribution from Figure 6, the proposed project will add 150 or more new trips during the AM peak hour to the freeway segments on either side of the Arrow Highway, Los Angeles Street and Live Oak Avenue interchanges in the Project year of 2021.

Freeway Mainline Volume Analysis – Caltrans Guidelines

Potential freeway facility impacts were also considered per Caltrans traffic study guidelines. Existing volumes were compiled from Caltrans data, via AADT (Average Annual Daily Traffic) data reports from 2017. The year 2017 is the most recent available data summarized by Caltrans. Table 16 provides a summary of the collected data.

Table 16 – Caltrans Volume Data for Mainline Freeway Segments

Route	County	Postmile	DESCRIPTION	BACK AADT	AHEAD AADT
010	LA	31.151	BALDWIN PARK, JCT. RTE. 605	**235,000**	**222,000**
210	LA	36.410	DUARTE, JCT. RTE. 605	**256,000**	**269,000**
605	LA	21.074	BALDWIN PARK, RAMONA BOULEVARD	197,000	**190,000**
605	LA	22.153	IRWINDALE, LOWER AZUSA ROAD/LOS ANGELES ST	190,000	**176,000**
605	LA	23.515	IRWINDALE, LIVE OAK AVENUE	176,000	**146,000**
605	LA	23.958	IRWINDALE, ARROW HIGHWAY	146,000	**160,000**

The volumes for the related analysis come from the bolded figures under the "Back AADT" and "Ahead AADT" columns in Table 16. The "back" and "ahead" labels refer to the direction on the freeway facility from the analyzed location. Per Caltrans definitions for data collection and analysis, back volumes are further south or west on the facility and ahead volumes are further north or east on the facility (in relation to the overall facility direction of travel within the region). As the "back" counts relative to one location match the "ahead" counts at the next location, the latter were used for simplicity and consistency for mainline locations on I-605. For the I-10 and I-210 freeway segments, the use of "back" and "ahead" counts relative to the junction with the I-605 freeway enabled a comparison of traffic to the west and to the east of the junction.

Peak-hour volumes were derived by applying peak-hour and peak directional percentages defined by separate Caltrans data. These percentages provide an estimate of the proportion of average daily traffic traveling in the peak direction in peak hours. The peak directional volume was applied to both directions of travel to provide a conservative analysis. The peak-hour and directional factors used for both the analyzed mainline and merging/weaving segments are defined in Table 17.

Table 17 – Peak Hour ("K") and Directional ("D") Factors

Route	County	Postmile	AM Direction	AM_K_FACTOR	AM_D_FACTOR	PM_Direction	PM_K_FACTOR	PM_D_FACTOR
605	LA	22.920	South	6.630	54.690	North	6.850	50.830
010	LA	30.300	West	6.510	61.470	West	7.070	54.650
210	LA	42.661	West	6.880	51.190	East	6.470	55.210

Future background traffic conditions for the project year of 2021 were obtained by applying the two percent annual ambient growth factor from the primary traffic impact analysis to the existing peak-hour and directional volumes. The growth factor was applied based on the count year of 2017. Cumulative project trips entering or leaving freeway ramps were then assigned to freeway segments to define the future-without Project conditions.

Finally project trips entering or leaving freeway ramps were added to the future-without Project volumes to define the future with project freeway operating conditions.

Freeway Mainline Highway Capacity Manual Analysis

A freeway mainline level of service calculation for the future without and future with-Project traffic volumes was conducted, using the Highway Capacity Manual methodology. Table 18 summarizes the results of this analysis, for mainline segments on the I-10, I-210 and I-605 freeways:

Some of the mainline segments on the I-605 freeway operate at acceptable LOS values in all scenarios, but six of the 12 locations operate at LOS E or F under future conditions with or without the proposed Project. The mainline segments on the I-10 and I-210 freeways operate at LOS values of E or F during at least one peak hour in all scenarios. The northbound and southbound segments on I-605 to the "back" of Lower Azusa/Los Angeles Street operate at LOS E during the Weekday PM and AM peak hours, respectively, in the future scenarios.

Table 18 – Mainline LOS Calculations

No	Fwy/Direction	Mainline Segment	Peak Hour	Existing (2017) Condition		Future (2020) No Project		Future (2020) With Project	
				Density	LOS	Density	LOS	Density	LOS
1	I-210	Back of I-605	Weekday AM	35.2	E	40.1	E	41.0	E
			Weekday PM	36.1	E	41.2	E	41.9	E
2	I-605 SB	Ahead of Arrow Highway	Weekday AM	24.2	C	27.4	D	28.4	D
			Weekday PM	23.2	C	25.2	C	25.6	C
3	I-605 SB	Ahead of Live Oak Avenue	Weekday AM	23.5	C	23.5	C	24.1	C
			Weekday PM	21.2	C	22.5	C	22.8	C
4	I-605 SB	Ahead of Lower Azusa Road/Los Angeles Street	Weekday AM	27.7	D	30.4	D	31.5	D
			Weekday PM	26.4	D	31.4	D	32.1	D
5	I-605 SB	Back of Lower Azusa Road/Los Angeles Street (Ahead of Ramona Blvd)	Weekday AM	30.8	D	34.5	D	35.0	D
			Weekday PM	29.1	D	35.7	E	36.7	E
6	I-10	Back of I-605	Weekday AM	35.2	E	40.1	E	40.4	E
			Weekday PM	33.4	D	37.6	E	37.9	E
7	I-10	Ahead of I-605	Weekday AM	-	F	-	F	-	F
			Weekday PM	-	F	-	F	-	F
8	I-605 NB	Back of Lower Azusa Road/Los Angeles Street (Ahead of Ramona Blvd)	Weekday AM	31.2	D	38.5	E	39.9	E
			Weekday PM	29.5	D	33.2	D	33.7	D
9	I-605 NB	Ahead of Lower Azusa Road/Los Angeles Street	Weekday AM	27.5	D	33.0	D	33.6	D
			Weekday PM	26.2	D	29.0	D	29.6	D
10	I-605 NB	Ahead of Live Oak Avenue	Weekday AM	22.3	C	23.8	C	24.2	C
			Weekday PM	21.5	C	22.8	C	23.2	C
11	I-605 NB	Ahead of Arrow Highway	Weekday AM	25.7	C	28.0	D	28.7	D
			Weekday PM	24.6	C	28.1	D	28.9	D
12	I-210	Ahead of I-605	Weekday AM	37.9	E	44.3	E	45.0	E
			Weekday PM	39.0	E	-	F	-	F

LOS = Level of Service

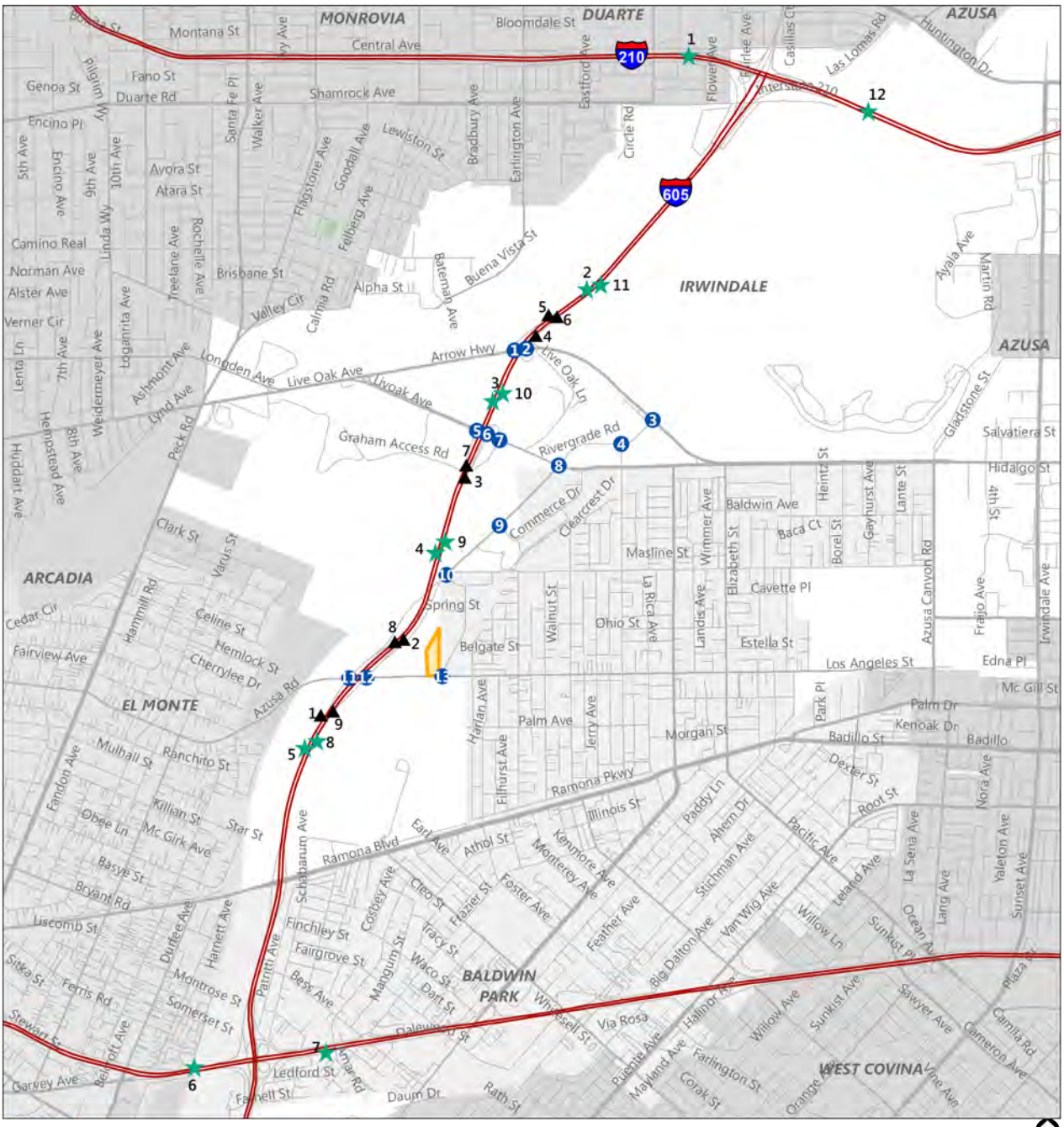
Freeway Weaving Area Highway Capacity Manual Analysis

Freeway merge/weaving analyses were conducted for access ramp connections at the mainline along the I-605 freeway, as summarized in Table 19. The analyzed access ramp locations are illustrated on Figure 12, and the ramp locations icons show the approximate gore points (the junction of the each ramp with the mainline).

FIGURE 12

13131 Los Angeles Street EIR

Study Mainline and Ramp Locations



The analysis of the merging and weaving segments was based on application of the peak-hour and directional factors to the most recent Caltrans AADT volumes from the adjoining ramps. While 2017 volumes were used where available, half of the most-recent ramp AADT volumes were from the year 2015. Table 19 highlights the values used for the analysis in bold.

As on the mainline segments, project and cumulative project trips entering and exiting each ramp were added to define the analyzed future without-Project and future with-Project scenarios, along with the ambient growth rate applied to the study intersections. Traffic volumes were added to the nearest upstream mainline segments to provide a realistic estimate of traffic fluctuation along the freeway corridor.

Table 19 – Caltrans Volume Data for Merging/Weaving Segments

COUNTY	ROUTE	Postmile	DESCRIPTION	AADT Values	
				YR_2015	YR_2017
LA	605	21.980	NB OFF TO LOWER AZUSA/LA ST	**12490**	
LA	605	22.366	NB ON FR LOWER AZUSA/LA ST	**4130**	**3806**
LA	605	23.230	NB OFF TO LIVE OAK AVE		**7725**
LA	605	23.952	NB ON FROM EB ARROW HWY	2540	**2627**
LA	605	24.152	NB ON FROM WB ARROW HWY	3700	**3901**
LA	605	21.951	SB ON FR LOWER AZUSA/LA ST	**12370**	
LA	605	22.315	SB OFF TO LOWER AZUSA/LA ST	4370	**8309**
LA	605	23.346	SB ON FROM LIVE OAK AVE	14050	**16362**
LA	605	24.058	SB OFF TO ARROW HWY	**7700**	

Table 20 – Merging/Weaving Area LOS Calculations

No	Direction	Merge/Diverge Segment	Peak Hour	Existing (2015 or 2017) Condition		Future (2020) No Project		Future (2020) With Project	
				Density	LOS	Density	LOS	Density	LOS
1	NB	Off at Los Angeles Street	Weekday AM	35.400	**E**	39.900	**E**	41.300	**E**
			Weekday PM	34.200	D	36.800	**E**	37.500	**E**
2	NB	On from Los Angeles Street	Weekday AM	28.400	D	31.600	D	32.300	D
			Weekday PM	27.500	C	29.400	D	30.200	D
3	NB	Off at Live Oak avenue	Weekday AM	31.900	D	38.700	**E**	39.100	**E**
			Weekday PM	30.800	D	33.900	D	34.400	D
4	NB	On from Arrow Highway eb	Weekday AM	24.100	C	25.600	C	25.900	C
			Weekday PM	23.300	C	26.900	C	27.200	C
5	NB	On from Arrow Highway wb	Weekday AM	24.700	C	26.100	C	26.500	C
			Weekday PM	23.900	C	26.100	C	26.800	C
6	SB	Off at Arrow Highway	Weekday AM	28.900	D	33.100	D	34.100	D
			Weekday PM	27.900	C	30.200	D	30.700	D
7	SB	On from Live Oak avenue	Weekday AM	29.500	D	30.200	D	30.800	D
			Weekday PM	27.200	C	32.600	D	33.200	D
8	SB	Off at Lower Azusa Road	Weekday AM	31.800	D	33.900	D	35.300	**E**
			Weekday PM	30.700	D	34.400	D	35.200	D
9	SB	On from Lower Azusa Road	Weekday AM	29.900	D	31.900	D	32.300	D
			Weekday PM	28.900	D	32.500	D	33.300	D

LOS = Level of Service

Overall Incremental Freeway Facility Impacts

Caltrans considers LOS E and F operations to be deficient, and any trips added to these conditions constitute a significant impact per Caltrans guidelines. Potential impacts to Caltrans facilities, based on the analysis above and these thresholds, are discussed here.

The following mainline segments would be operating at LOS E or F in the Project year per Table 18, and would have worsened operations due to the proposed Project:

- I-210, back of I-605
- I-605 southbound, back of Lower Azusa Road
- I-10, back of I-605
- I-10, ahead of I-605
- I-605 northbound, back of Lower Azusa Road
- I-210, ahead of I-605

The following merging/diverging areas at ramp junctions with mainline segments would be operating at LOS E or F in the Project year per Table 20, and would have worsened operations due to the proposed Project:

- I-605 Northbound Off-Ramp at Los Angeles Street
- I-605 Northbound Off-Ramp at Live Oak Avenue
- I-605 Southbound Off-Ramp at Lower Azusa Road

At these six freeway mainline segments and three diverging/merging areas, significant Project impacts would potentially occur per Caltrans traffic impact study guidelines and deficient LOS values.

Off-Ramp Queueing Analysis

Lengthy vehicle queues at off-ramps cause traffic to back up onto the freeway mainline, potentially impacting freeway operations. Therefore, queues were analyzed at four off-ramps adjacent to observed mainline segments on I-605 (and corresponding to four project study intersections) under without-Project and with-Project conditions, to assess whether the Project significantly affects queuing:

- I-605 Southbound Off-ramp at Arrow Highway (southbound approach to Study Intersection 1)
- I-605 Northbound Off-Ramps at Live Oak Avenue (northbound and southbound approaches to Study Intersection 6)
- I-605 Southbound Off-Ramp at Lower Azusa Road (southbound approach to Study Intersection 11)
- I-605 Northbound Off-Ramp at Los Angeles Street (northbound approach to Study Intersection 12)

The analysis focused on the 95th-percentile queue (i.e. the queue higher than 95 percent of observed queues), derived from simulation in *SimTraffic* software. Caltrans determines significant queuing impacts where a queue exceeds 85% of the length of the off-ramp. The study used this threshold to assess project queueing impacts. Table 21 provides the 95th-percentile queues and available storage at the four off-ramps.

Based on the analyzed queues and measured ramp lengths, operations will be significantly impacted under Future-with-Project conditions at the northbound off-ramps at Live Oak Avenue and Los Angeles Street and at the southbound off-ramp at the intersection of Rivergrade Road and Lower Azusa Road. At the former two ramp intersections, the Project does not create any new queuing impacts, with both off-ramps experiencing spillover queues under Future pre-project conditions during the affected peak hours. At the intersection of Rivergrade Road and Lower Azusa Road, however, the addition of project trips causes a significant queuing impact to appear on the southbound through-right lane during the AM peak hour.

Table 21 – Off-Ramp Queuing Analysis

Movement	Peak Hour	Ramp Storage Length (Feet)	Future No Project				Future with Project			
			95 % Vehicle Queue (feet)	95% Vehicle Queue (Vehicle)	Queue % of available storage	Significant Impact?	95% Vehicle Queue (feet)	95% Vehicle Queue (Vehicle)	Queue % of available storage	Significant Impact?
#1 I-605 SB OFF RAMP / ARROW HIGHWAY										
SBL	Weekday AM	964	482	20	50%	No	734	30	76%	No
	Weekday PM	964	230	10	24%	No	226	10	23%	No
#6 I-605 NB OFF RAMPS / LIVE OAK AVENUE										
NBR	Weekday AM	878	1072	43	122%	Yes	1086	44	124%	Yes
	Weekday PM	878	1000	40	114%	Yes	955	39	109%	Yes
SBR	Weekday AM	1667	1769	71	106%	Yes	1796	72	108%	Yes
	Weekday PM	1667	2027	82	122%	Yes	2041	82	122%	Yes
#11 RIVERGRADE ROAD SB (I-605 SB OFF RAMP) / LOWER AZUSA ROAD										
SBLT	Weekday AM	1364	247	10	18%	No	1157	47	85%	No
	Weekday PM	1364	319	13	23%	No	430	18	32%	No
SBTR	Weekday AM	1364	264	11	19%	No	1199	48	88%	Yes
	Weekday PM	1364	302	13	22%	No	399	16	29%	No
SBR	Weekday AM	1364	232	10	17%	No	239	10	18%	No
	Weekday PM	1364	237	10	17%	No	244	10	18%	No
#12 I-605 NB OFF RAMP / LOS ANGELES STREET										
NBLT	Weekday AM	1371	353	15	26%	No	436	18	32%	No
	Weekday PM	1371	1739	70	127%	Yes	1689	68	123%	Yes
NBTR	Weekday AM	1371	309	13	23%	No	408	17	30%	No
	Weekday PM	1371	1682	68	123%	Yes	1644	66	120%	Yes

Vehicle Queue figures assume average length of 25 feet per vehicle.

The queuing reports for ramp-adjacent study intersections are provided in Appendix J.

Highway Capacity Manual Operations Analysis

Traffic operations at freeway ramp-adjacent study intersections were also analyzed in Synchro 10 software. The operations analysis used the same volumes as the Project Traffic Impact Analysis but employed the Highway Capacity Manual methodology for signalized intersections. The analysis included both on-ramp and off-ramp intersections. The Levels of Service and Average Delay values for the intersections are shown in Table 22. Three of the six intersections operate at LOS E or F under Future Pre- and Post-project conditions.

Table 22 – Ramp Intersection Level of Service Analysis

Study Intersections		Peak Hour	Future (2020) No Project		Future (2020) With Project	
			V/C or Delay	LOS	V/C or Delay	LOS
1	I-605 Southbound Off-ramp/Arrow Highway	Weekday AM	27.2	C	32.6	C
		Weekday PM	10.6	B	11.4	B
2	I-605 Northbound On-ramp/Arrow Highway	Weekday AM	0.0	-	0.0	-
		Weekday PM	0.0	-	0.0	-
5	I-605 Southbound On-ramp/Live Oak Avenue	Weekday AM	26.5	C	29.4	C
		Weekday PM	249.5	**F**	251.1	**F**
6	I-605 Northbound Off-ramps/Live Oak Avenue*	Weekday AM	3409.4	**F**	3496.9	**F**
		Weekday PM	1033.8	**F**	1119.2	**F**
11	I-605 Southbound Ramps/Los Angeles Street	Weekday AM	31.4	C	40.6	D
		Weekday PM	40.0	D	51.4	D
12	I-605 Northbound Ramps/Los Angeles Street	Weekday AM	96.9	**F**	127.2	**F**
		Weekday PM	81.1	**F**	93.2	**F**

LOS = Level of Service

**HCM values derived from project level-of-service analysis in Vistro. Other figures derive from Synchro 10 software*

The Level of Service worksheets for ramp-adjacent study intersections are provided in Appendix K.

Project Fair-Share Volume Calculations

The Caltrans document entitled *Guide for the Preparation of Traffic Impact Studies* defines a formula for the computation of equitable share responsibility for freeway facility mitigation measures, where Caltrans proposed improvement projects have been identified. This formula is as follows:

$$\frac{\text{Vehicle trips generated by the project during the peak hour}}{(\text{Traffic volume on facility at build out}) - (\text{Existing volumes} + \text{area projects volumes})}$$

Where "build out" traffic volumes are volumes projected for an area horizon year (including ambient growth, cumulative project and proposed project development). Existing traffic volumes, and known area projects volumes, are removed from these volumes to isolate background growth that is not attributable to any specific project. These calculations are provided in Table 23, for the I-10, I-210 and I-605 mainline segments that operate at LOS E or F in the project year.

The Project share of volumes on the mainline freeway segments would range from 1 percent to 6.8 percent. These percentages are presented as informational items, as Caltrans does not have defined impact standards.

Table 23 – Fair-Share Calculations on Impacted Mainline Freeway Segments

Segment No	Segment Name	Period	1. Project Trips	2. Project Buildout Traffic *	3. Existing Traffic	4. Area Project Traffic	5. Post-Project Traffic minus Existing and Area Project Traffic	6. Fair-Share Percent= 1./5.
1	I-210, Back of I-605	AM	112	11830	9016	122	2692	4.2%
		PM	85	11972	9145	126	2701	3.1%
5	I-605 SB, Back of Lower Azusa Road/Los Angeles Street	PM	128	8680	6616	43	2021	6.3%
6	I-10, Back of I-605	AM	43	12259	9404	121	2734	1.6%
		PM	38	11838	9080	122	2636	1.4%
7	I-10, Ahead of I-605	AM	29	11576	8884	121	2571	1.1%
		PM	26	11180	8578	122	2480	1.0%
8	I-605 NB, Back of Lower Azusa Road/Los Angeles Street	AM	144	9554	6889	550	2115	6.8%
12	I-210, Ahead of I-605	AM	74	12441	9474	182	2785	2.7%
		PM	56	12604	9609	190	2805	2.0%

**Obtained by factoring up existing traffic volumes to year 2040 levels by a growth rate defined in the Los Angeles County Congestion Management Plan, then adding project and area project trips.*

APPENDIX A
Study Scoping Document

TRAFFIC STUDY – Scope Summary Document
13131 Los Angeles Street Industrial Project
April 2, 2019

This Scoping Summary Document acknowledges that the traffic study for the following project will be prepared in accordance with current traffic study guidelines and policies of the City of Irwindale.

Project Name: 13131 Los Angeles Street Industrial Project

Project Description and Scope of Work:

The proposed project is an industrial building of 525,000 square feet in interior floor area. Access would be provided by site driveways on Los Angeles Street at the south side of the site and on Rivergrade Road at the northwest side of the site. The project tenants are not yet identified, but are anticipated to be light industrial land uses. The proposed site plan is provided in Attachment A.

The scope of work includes an impact analysis at signalized City intersections in the vicinity of the project site, and analysis of potential impacts to nearby Caltrans facilities, as detailed below.

Study Intersections

The locations of these proposed study intersections are illustrated in Attachment B. A signal warrant analysis would also be conducted at the West Driveway/Los Angeles Street intersection.

1. I-605 Southbound Off-ramp/Arrow Highway
2. I-605 Northbound On-ramp/Arrow Highway
3. Rivergrade Road/ Arrow Highway
4. Stewart Avenue/ Rivergrade Road
5. . I-605 Southbound On-ramp/Live Oak Avenue
6. I-605 Northbound Off-ramps/Live Oak Avenue
7. Graham Access Road/ Live Oak Avenue
8. Rivergrade Road/Live Oak Avenue
9. Rivergrade Road/Commerce Drive
10. Rivergrade Road/Brooks Avenue
11. I-605 Southbound Ramps/Los Angeles Street
12. I-605 Northbound Ramps/Los Angeles Street
13. Little John Street/Los Angeles Street

Geographic Distribution

The trip distribution to the study area is estimated to be as follows:

- 20 percent to/from I-605 to the north via Arrow Highway interchange
- 20 percent to I-605 south via Live Oak Avenue interchange
- 25 percent from the north on I-605 via Los Angeles Street interchange

- 48 percent from the south on I-605 via Los Angeles Street interchange
- 25 percent to the north on I-605 via Los Angeles Street interchange
- 28 percent to the south on I-605 via Los Angeles Street interchange
- 2 percent to/from Arrow Highway to the east
- 2 percent to/from Los Angeles Street/Lower Azusa Avenue to the west
- 3 percent to/from Los Angeles Street to the east

The proposed project trip distribution (100 percent in / 100 percent out) to the study area locations is provided on Attachment C. The project assigned trips based on this distribution and the net project trip generation are provided on Attachment D1 (AM peak hour) and Attachment D2 (PM peak hour).

Trip Generation

The project building space will be occupied by tenants that are not yet identified by the applicant/owner. The tenants have been anticipated for the traffic study to be light industrial uses as a conservative approach to the analysis, as the rates for this use are higher than other potential uses such as warehousing. Rates are based on floor area and ITE *Trip Generation (10th Edition)*.

The trip generation calculations are provided in Table 1. The total estimated project trip generation is 2,604 daily vehicles, including 367 vehicles in the AM peak hour and 331 vehicles in the PM peak hour.

TABLE 1 – ESTIMATED NET PROJECT TRIP GENERATION

				Weekday						
				Daily	AM Peak Hour			PM Peak Hour		
ITE Code	Land Use	Intensity	Units	Rate	Rate	In	Out	Rate	In	Out
Trip Generation Rates										
110	General Light Industrial	-	KSF	4.96	0.70	88%	12%	0.63	13%	87%
Trip Generation Totals-New Use										
110	General Light Industrial	525.000	KSF	2,604	367	323	44	331	43	288
Total		**525**		**2,604**	**367**	**323**	**44**	**331**	**43**	**288**

Project Buildout Year: 2020 Ambient Growth Rate: 2% per year

Area Projects: A cumulative/area project list will be obtained from the City of Irwindale, to include known pending/under construction projects in the City and the City of El Monte, the City of Arcadia, and the City of Baldwin Park.

Caltrans Facility Analysis

Potential impacts to off-ramp facilities will be examined at the Los Angeles Street, Live Oak Avenue, Arrow Highway interchanges at the I-605 freeway (using Highway Capacity Manual method and existing/future queuing calculations), and nearby mainline freeway segments (using High Capacity Software analysis for mainline and merging/diverging points, as applicable at these interchanges.

General Safety Evaluation

Based on the projected traffic volumes, the analysis will consider whether left- or right-turn lanes or other safety enhancements are needed to satisfactorily accommodate site traffic.

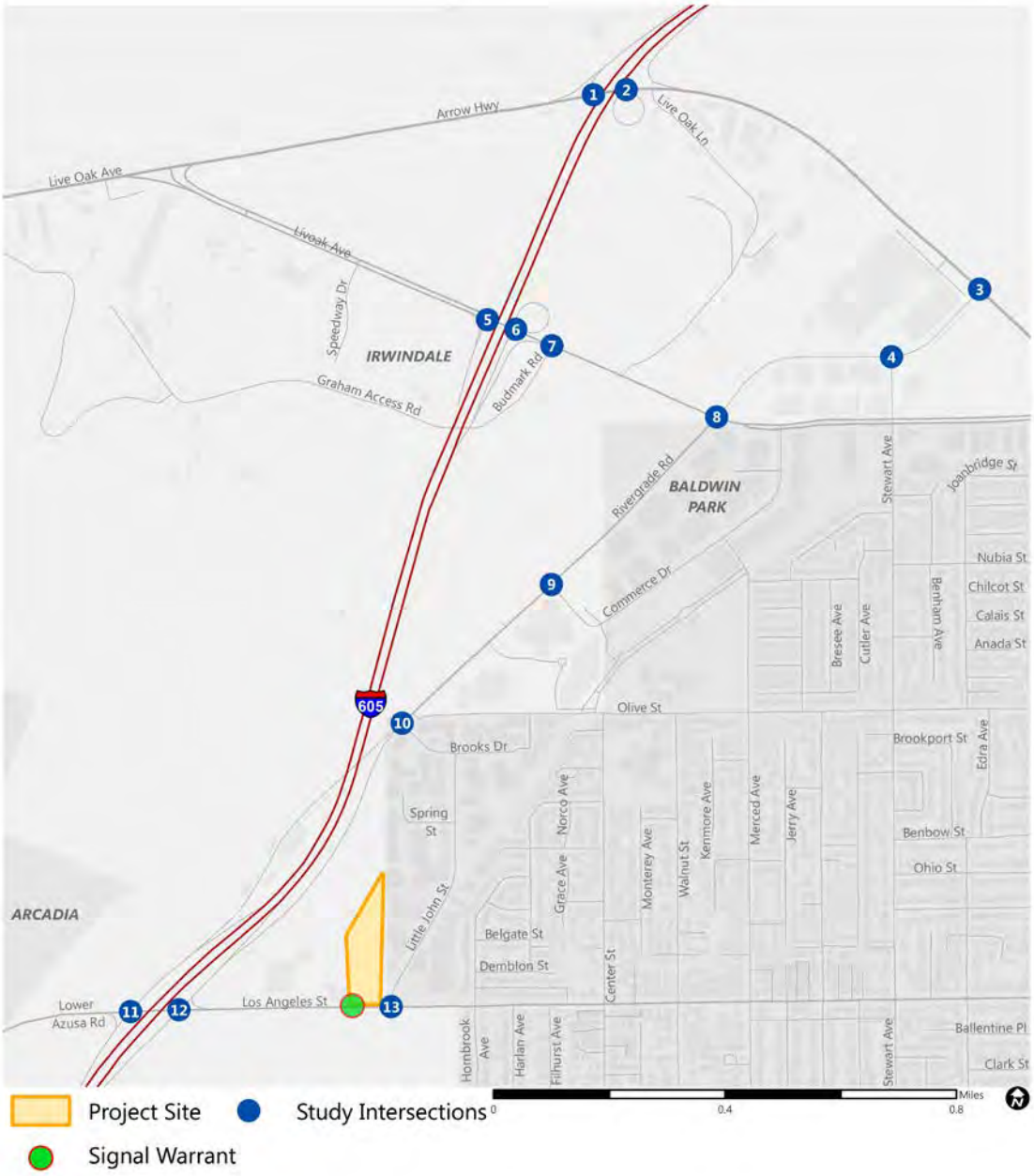
Project Study Contact

Name:	Brian Marchetti, KOA Corporation
Address	1100 Corporate Center Drive, Suite. 201, Monterey Park, CA 91754
Phone No.	(323) 260-4703
Email	bmarchetti@koacorp.com

TRAFFIC STUDY – Scope Summary Document
13131 Los Angeles Street Industrial Project
April 2, 2019

ATTACHMENT A - SITE PLAN

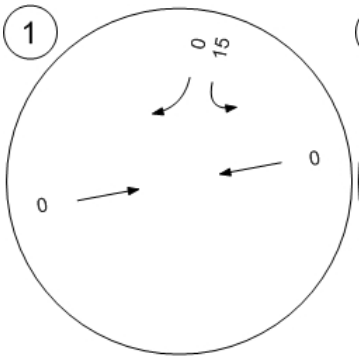
ATTACHMENT B – STUDY AREA



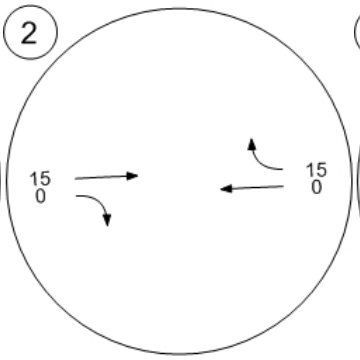
ATTACHMENT C – PROJECT TRIP DISTRIBUTION

Traffic Volume - Future Total Volume

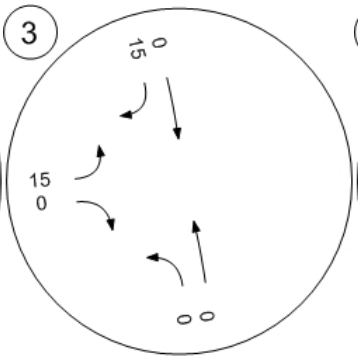
Arrow Highway and I-605 SB



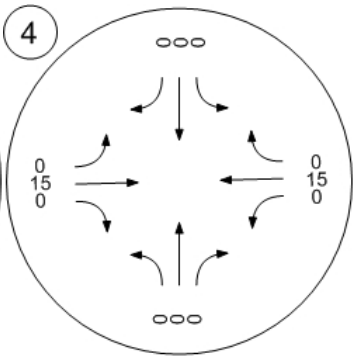
Arrow Highway and I-605 NB



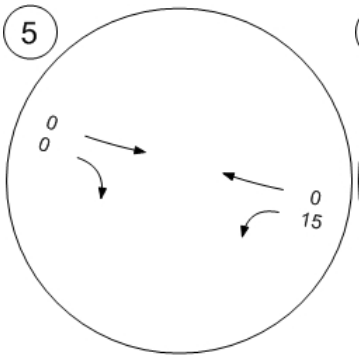
Rivergrade Rd and Arrow Hw



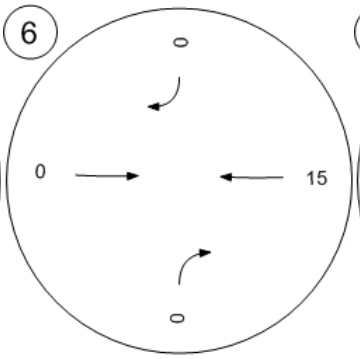
Rivergrade Rd and Stewart A



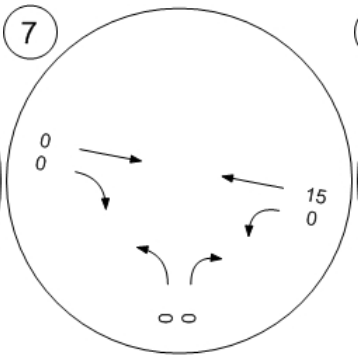
Live Oak Avenue and I-605 S



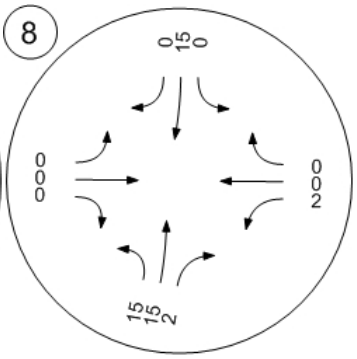
Live Oak Ave and I-605 NB O



Live Oak Avenue and Graha

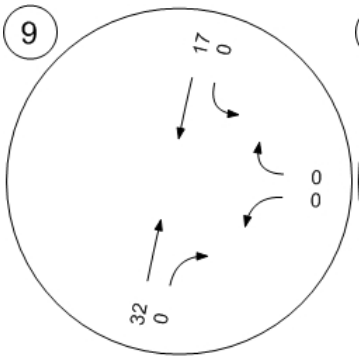


Rivergrade Rd and Live Oak

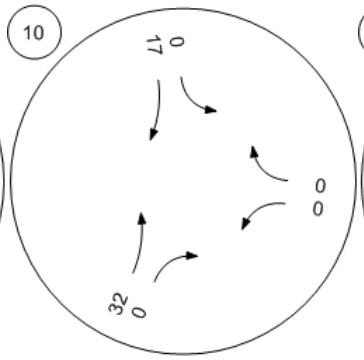


Traffic Volume - Future Total Volume

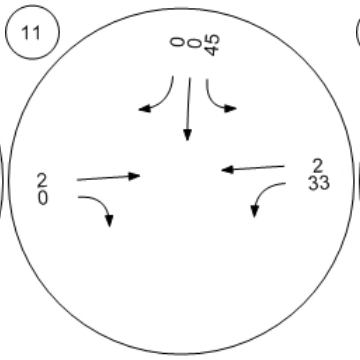
Rivergrade Road and Comm



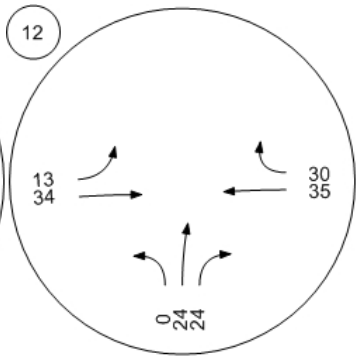
Rivergrade Road and Brooks



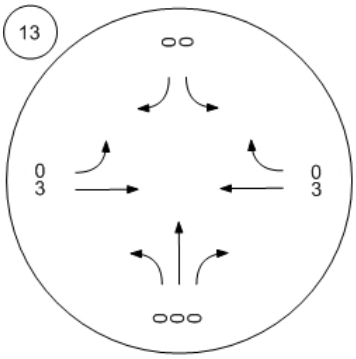
I-605 SB Ramps/Los Angeles



I-605 NB ramps/Los Angeles



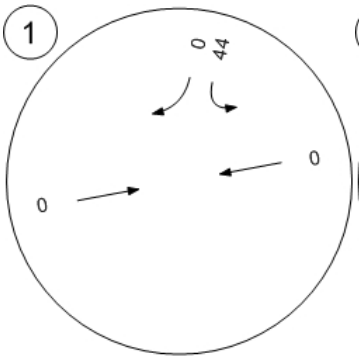
Littlejohn St and Los Angeles



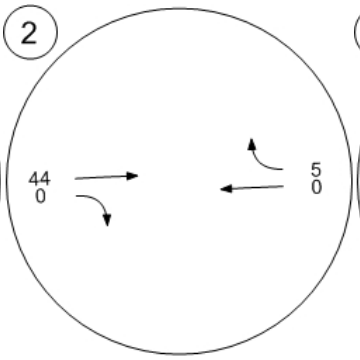
ATTACHMENT D1 – PROJECT TRIP ASSIGNMENT, AM PEAK HOUR

Traffic Volume - Net New Site Trips

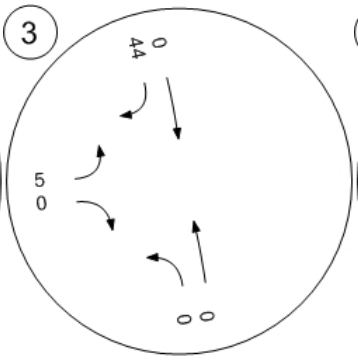
Arrow Highway and I-605 SB



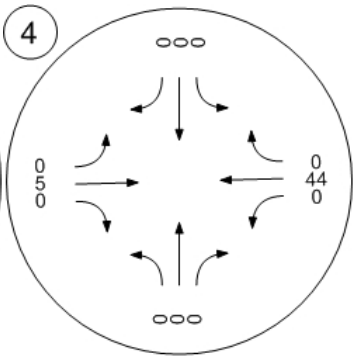
Arrow Highway and I-605 NB



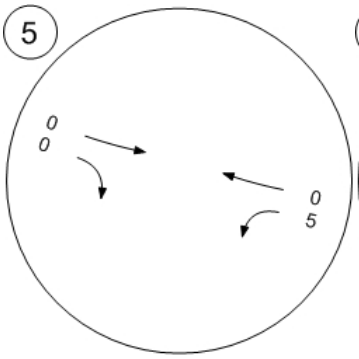
Rivergrade Rd and Arrow Hw



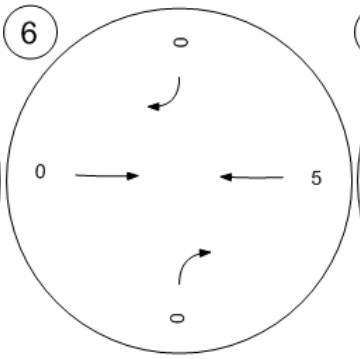
Rivergrade Rd and Stewart A



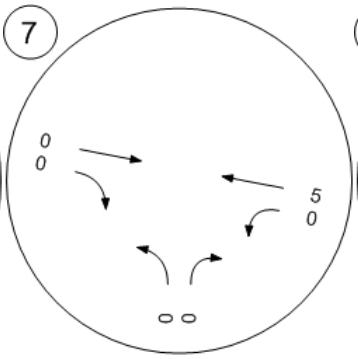
Live Oak Avenue and I-605 S



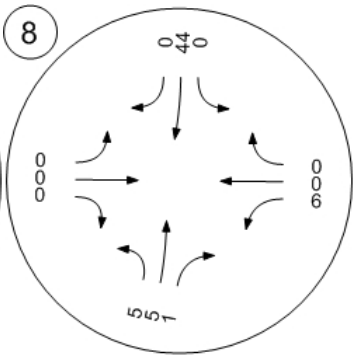
Live Oak Ave and I-605 NB O



Live Oak Avenue and Graha

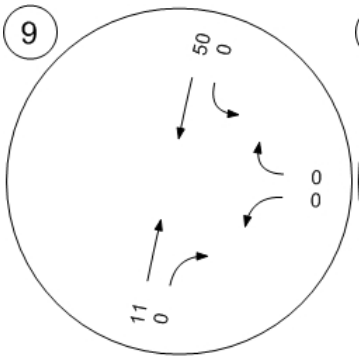


Rivergrade Rd and Live Oak

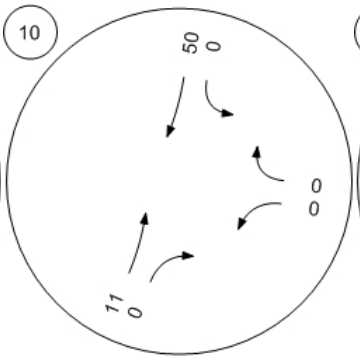


Traffic Volume - Net New Site Trips

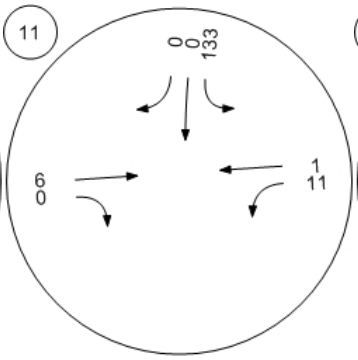
Rivergrade Road and Comm



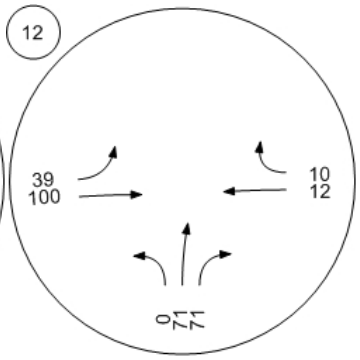
Rivergrade Road and Brooks



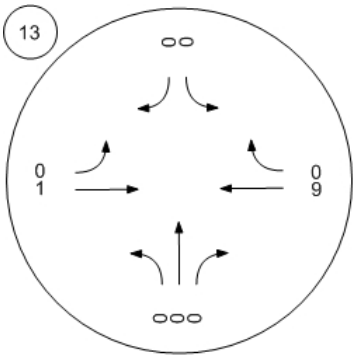
I-605 SB Ramps/Los Angeles



I-605 NB ramps/Los Angeles



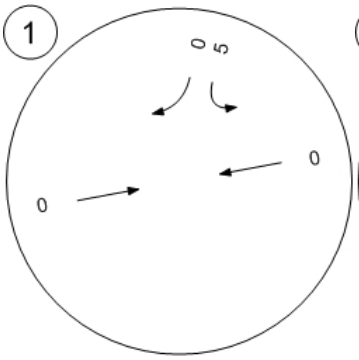
Littlejohn St and Los Angeles



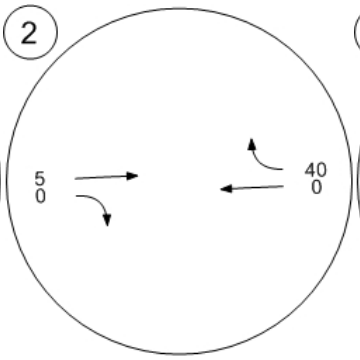
ATTACHMENT D2 – TRIP ASSIGNMENT, PM PEAK HOUR

Traffic Volume - Net New Site Trips

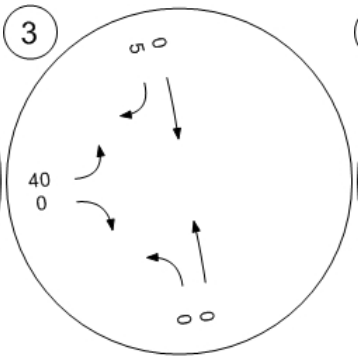
Arrow Highway and I-605 SB



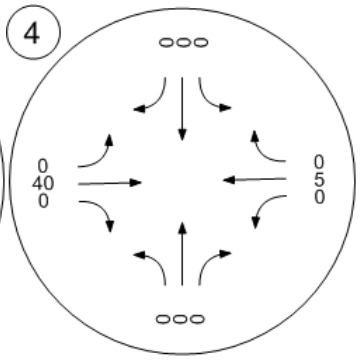
Arrow Highway and I-605 NB



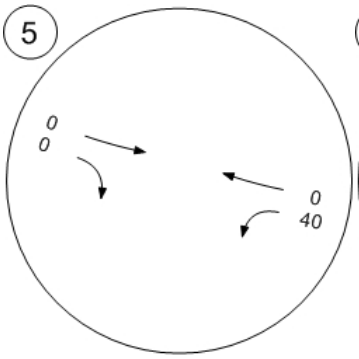
Rivergrade Rd and Arrow Hw



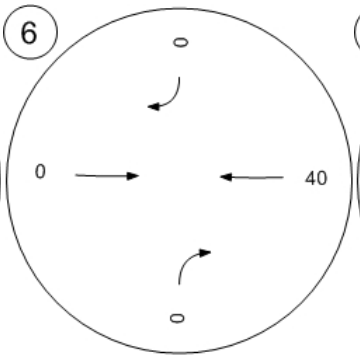
Rivergrade Rd and Stewart A



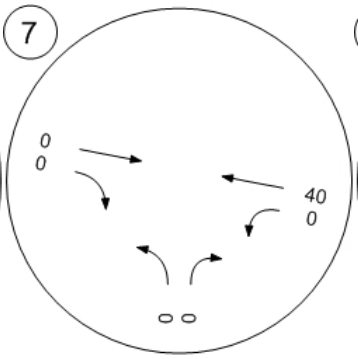
Live Oak Avenue and I-605 S



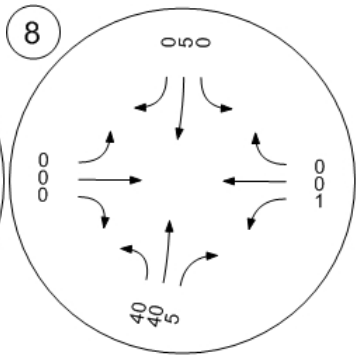
Live Oak Ave and I-605 NB O



Live Oak Avenue and Graha

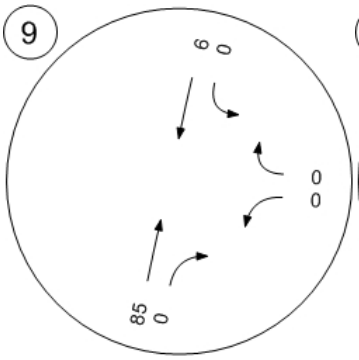


Rivergrade Rd and Live Oak

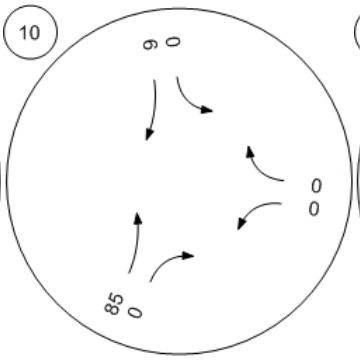


Traffic Volume - Net New Site Trips

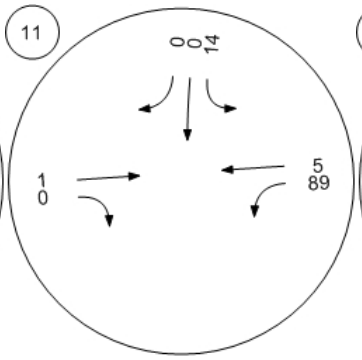
Rivergrade Road and Comm



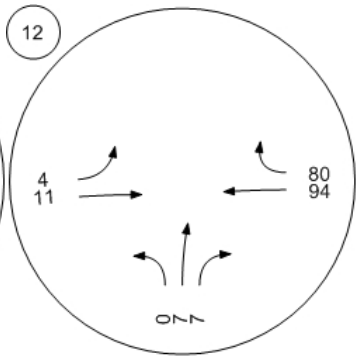
Rivergrade Road and Brooks



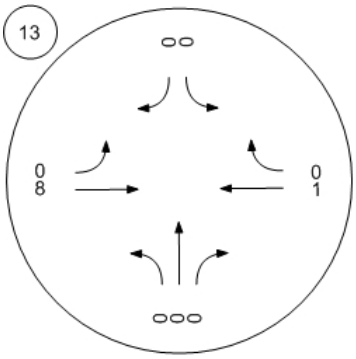
I-605 SB Ramps/Los Angeles



I-605 NB ramps/Los Angeles



Littlejohn St and Los Angeles



APPENDIX B
Traffic Count Data

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB off-ramp & Arrow Hwy
City: Irwindale
Control: Signalized

Project ID: 19-05193-001
Date: 4/10/2019

Total

NS/EW Streets:	I-605 SB off-ramp				I-605 SB off-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	75	0	112	0	0	89	0	0	0	411	0	1	688
7:15 AM	0	0	0	0	88	0	154	0	0	108	0	1	0	433	0	0	784
7:30 AM	0	0	0	0	106	0	202	0	0	135	0	0	0	382	0	0	825
7:45 AM	0	0	0	0	150	0	178	0	0	178	0	3	0	356	0	0	865
8:00 AM	0	0	0	0	129	0	194	0	0	141	0	4	0	300	0	0	768
8:15 AM	0	0	0	0	122	0	133	0	0	153	0	1	0	280	0	0	689
8:30 AM	0	0	0	0	131	0	147	0	0	134	0	0	0	253	0	0	665
8:45 AM	0	0	0	0	99	0	116	0	0	128	0	0	0	228	0	0	571
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	900	0	1236	0	0	1066	0	9	0	2643	0	1	5855
APPROACH %'s :					42.13%	0.00%	57.87%	0.00%	0.00%	99.16%	0.00%	0.84%	0.00%	99.96%	0.00%	0.04%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	473	0	728	0	0	562	0	8	0	1471	0	0	3242
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.788	0.000	0.901	0.000	0.000	0.789	0.000	0.500	0.000	0.849	0.000	0.000	0.937
					0.915				0.787				0.849				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	59	0	52	0	0	299	0	0	0	104	0	0	514
4:15 PM	0	0	0	0	76	0	63	0	0	261	0	0	0	89	0	0	489
4:30 PM	0	0	0	0	55	0	51	0	0	322	0	0	0	111	0	0	539
4:45 PM	0	0	0	0	84	0	59	0	0	284	0	0	0	107	0	0	534
5:00 PM	0	0	0	0	58	0	57	0	0	342	0	0	0	105	0	0	562
5:15 PM	0	0	0	0	53	0	78	0	0	354	0	0	0	99	0	0	584
5:30 PM	0	0	0	0	47	0	90	0	0	348	0	0	0	125	0	0	610
5:45 PM	0	0	0	0	74	0	72	0	0	305	0	0	0	138	0	0	589
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	506	0	522	0	0	2515	0	0	0	878	0	0	4421
APPROACH %'s :					49.22%	0.00%	50.78%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	232	0	297	0	0	1349	0	0	0	467	0	0	2345
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.784	0.000	0.825	0.000	0.000	0.953	0.000	0.000	0.000	0.846	0.000	0.000	0.961
					0.906				0.953				0.846				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB off-ramp & Arrow Hwy
City: Irwindale
Control: Signalized

Project ID: 19-05193-001
Date: 4/10/2019

Cars

NS/EW Streets:	I-605 SB off-ramp				I-605 SB off-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	70	0	101	0	0	72	0	0	0	393	0	0	636
7:15 AM	0	0	0	0	85	0	144	0	0	91	0	0	0	414	0	0	734
7:30 AM	0	0	0	0	97	0	189	0	0	117	0	0	0	368	0	0	771
7:45 AM	0	0	0	0	147	0	154	0	0	150	0	0	0	335	0	0	786
8:00 AM	0	0	0	0	128	0	175	0	0	123	0	0	0	284	0	0	710
8:15 AM	0	0	0	0	116	0	119	0	0	126	0	0	0	248	0	0	609
8:30 AM	0	0	0	0	124	0	137	0	0	100	0	0	0	230	0	0	591
8:45 AM	0	0	0	0	96	0	104	0	0	100	0	0	0	210	0	0	510
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	863	0	1123	0	0	879	0	0	0	2482	0	0	5347
APPROACH %'s :					43.45%	0.00%	56.55%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	457	0	662	0	0	481	0	0	0	1401	0	0	3001
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.777	0.000	0.876	0.000	0.000	0.802	0.000	0.000	0.000	0.846	0.000	0.000	0.955
					0.923				0.802				0.846				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	57	0	49	0	0	286	0	0	0	94	0	0	486
4:15 PM	0	0	0	0	75	0	54	0	0	252	0	0	0	86	0	0	467
4:30 PM	0	0	0	0	50	0	47	0	0	307	0	0	0	107	0	0	511
4:45 PM	0	0	0	0	80	0	48	0	0	269	0	0	0	101	0	0	498
5:00 PM	0	0	0	0	50	0	48	0	0	333	0	0	0	104	0	0	535
5:15 PM	0	0	0	0	52	0	72	0	0	349	0	0	0	97	0	0	570
5:30 PM	0	0	0	0	43	0	80	0	0	334	0	0	0	123	0	0	580
5:45 PM	0	0	0	0	67	0	67	0	0	301	0	0	0	135	0	0	570
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	474	0	465	0	0	2431	0	0	0	847	0	0	4217
APPROACH %'s :					50.48%	0.00%	49.52%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	212	0	267	0	0	1317	0	0	0	459	0	0	2255
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.791	0.000	0.834	0.000	0.000	0.943	0.000	0.000	0.000	0.850	0.000	0.000	0.972
					0.894				0.943				0.850				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB off-ramp & Arrow Hwy
City: Irwindale
Control: Signalized

Project ID: 19-05193-001
Date: 4/10/2019

2axle

NS/EW Streets:	I-605 SB off-ramp				I-605 SB off-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	1	0	0	4	0	0	0	6	0	1	13
7:15 AM	0	0	0	0	0	0	1	0	0	6	0	1	0	10	0	0	18
7:30 AM	0	0	0	0	1	0	1	0	0	7	0	0	0	4	0	0	13
7:45 AM	0	0	0	0	2	0	5	0	0	6	0	3	0	6	0	0	22
8:00 AM	0	0	0	0	0	0	1	0	0	4	0	4	0	2	0	0	11
8:15 AM	0	0	0	0	3	0	0	0	0	7	0	1	0	10	0	0	21
8:30 AM	0	0	0	0	1	0	1	0	0	4	0	0	0	6	0	0	12
8:45 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	8	0	0	13
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	8	0	10	0	0	43	0	9	0	52	0	1	123
APPROACH %'s :					44.44%	0.00%	55.56%	0.00%	0.00%	82.69%	0.00%	17.31%	0.00%	98.11%	0.00%	1.89%	
PEAK HR :	**07:15 AM - 08:15 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	3	0	8	0	0	23	0	8	0	22	0	0	64
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.375	0.000	0.400	0.000	0.000	0.821	0.000	0.500	0.000	0.550	0.000	0.000	0.727
					0.393				0.861				0.550				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	7	0	0	14
4:15 PM	0	0	0	0	0	0	3	0	0	4	0	0	0	1	0	0	8
4:30 PM	0	0	0	0	2	0	1	0	0	3	0	0	0	3	0	0	9
4:45 PM	0	0	0	0	2	0	1	0	0	6	0	0	0	3	0	0	12
5:00 PM	0	0	0	0	0	0	3	0	0	5	0	0	0	1	0	0	9
5:15 PM	0	0	0	0	0	0	1	0	0	3	0	0	0	1	0	0	5
5:30 PM	0	0	0	0	0	0	4	0	0	2	0	0	0	2	0	0	8
5:45 PM	0	0	0	0	1	0	2	0	0	0	0	0	0	2	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	5	0	15	0	0	30	0	0	0	20	0	0	70
APPROACH %'s :					25.00%	0.00%	75.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	**05:00 PM - 06:00 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	10	0	0	10	0	0	0	6	0	0	27
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.000	0.625	0.000	0.000	0.500	0.000	0.000	0.000	0.750	0.000	0.000	0.750
					0.688				0.500				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB off-ramp & Arrow Hwy
City: Irwindale
Control: Signalized

Project ID: 19-05193-001
Date: 4/10/2019

3axle

NS/EW Streets:	I-605 SB off-ramp				I-605 SB off-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	2	0	1	0	0	4	0	0	0	7	0	0	14
7:15 AM	0	0	0	0	1	0	3	0	0	4	0	0	0	1	0	0	9
7:30 AM	0	0	0	0	3	0	2	0	0	3	0	0	0	0	0	0	8
7:45 AM	0	0	0	0	1	0	6	0	0	3	0	0	0	4	0	0	14
8:00 AM	0	0	0	0	1	0	5	0	0	3	0	0	0	2	0	0	11
8:15 AM	0	0	0	0	1	0	3	0	0	6	0	0	0	4	0	0	14
8:30 AM	0	0	0	0	1	0	1	0	0	7	0	0	0	2	0	0	11
8:45 AM	0	0	0	0	1	0	4	0	0	2	0	0	0	2	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	11	0	25	0	0	32	0	0	0	22	0	0	90
APPROACH %'s :					30.56%	0.00%	69.44%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	**07:15 AM - 08:15 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	6	0	16	0	0	13	0	0	0	7	0	0	42
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.500	0.000	0.667	0.000	0.000	0.813	0.000	0.000	0.000	0.438	0.000	0.000	0.750
						0.786				0.813				0.438			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	1	0	1	0	0	3	0	0	0	0	0	0	5
4:45 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	0	3
5:00 PM	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	1	0	0	0	0	5	0	0	0	0	0	0	6
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	6	0	1	0	0	13	0	0	0	2	0	0	22
APPROACH %'s :					85.71%	0.00%	14.29%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	**05:00 PM - 06:00 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	4	0	0	0	0	7	0	0	0	1	0	0	12
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.350	0.000	0.000	0.000	0.250	0.000	0.000	0.500
						0.500				0.350				0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB off-ramp & Arrow Hwy
City: Irwindale
Control: Signalized

Project ID: 19-05193-001
Date: 4/10/2019

4axle

NS/EW Streets:	I-605 SB off-ramp				I-605 SB off-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	2	0	9	0	0	9	0	0	0	5	0	0	25
7:15 AM	0	0	0	0	2	0	6	0	0	7	0	0	0	8	0	0	23
7:30 AM	0	0	0	0	5	0	10	0	0	8	0	0	0	10	0	0	33
7:45 AM	0	0	0	0	0	0	13	0	0	19	0	0	0	11	0	0	43
8:00 AM	0	0	0	0	0	0	13	0	0	11	0	0	0	12	0	0	36
8:15 AM	0	0	0	0	2	0	11	0	0	14	0	0	0	18	0	0	45
8:30 AM	0	0	0	0	5	0	8	0	0	23	0	0	0	15	0	0	51
8:45 AM	0	0	0	0	2	0	8	0	0	21	0	0	0	8	0	0	39
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	18	0	78	0	0	112	0	0	0	87	0	0	295
APPROACH %'s :					18.75%	0.00%	81.25%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	0	0	7	0	42	0	0	45	0	0	0	41	0	0	135
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.350	0.000	0.808	0.000	0.000	0.592	0.000	0.000	0.000	0.854	0.000	0.000	0.785
					0.817				0.592				0.854				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	1	1	0	0	3	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	2	0	3	0	0	5	0	0	0	3	0	0	13
4:15 PM	0	0	0	0	1	0	6	0	0	4	0	0	0	2	0	0	13
4:30 PM	0	0	0	0	2	0	2	0	0	9	0	0	0	1	0	0	14
4:45 PM	0	0	0	0	1	0	10	0	0	8	0	0	0	2	0	0	21
5:00 PM	0	0	0	0	6	0	6	0	0	3	0	0	0	0	0	0	15
5:15 PM	0	0	0	0	0	0	5	0	0	2	0	0	0	1	0	0	8
5:30 PM	0	0	0	0	3	0	6	0	0	7	0	0	0	0	0	0	16
5:45 PM	0	0	0	0	6	0	3	0	0	3	0	0	0	0	0	0	12
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	21	0	41	0	0	41	0	0	0	9	0	0	112
APPROACH %'s :					33.87%	0.00%	66.13%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	15	0	20	0	0	15	0	0	0	1	0	0	51
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.625	0.000	0.833	0.000	0.000	0.536	0.000	0.000	0.000	0.250	0.000	0.000	0.797
					0.729				0.536				0.250				

Prepared by National Data & Surveying Services

I-605 SB off-ramp & Arrow Hwy

Peak Hour Turning Movement Count

ID: 19-05193-001
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS		COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

I-605 SB off-ramp — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departing
AM	728	0	473	0	0
NOON	0	0	0	0	0
PM	297	0	232	0	0
Lanes	1	1	0	0	

Arrow Hwy — EASTBOUND

	AM	NOON	PM	Lanes
Departing	2207	0	764	
U-Turn	8	0	0	0
Left	0	0	0	0
Thru	562	0	1349	3
Right	0	0	0	0

Arrow Hwy — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	0	0	0
Thru	2	467	0	1471
Left	0	0	0	0
U-Turn	0	0	0	0
Departing		1581	0	1035

I-605 SB off-ramp — NORTHBOUND

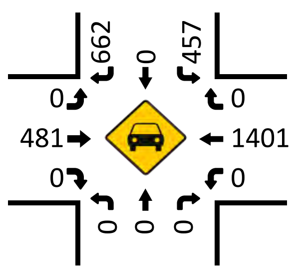
	Departing	U-Turn	Left	Thru	Right
Lanes		0	0	0	0
PM	0	0	0	0	0
NOON	0	0	0	0	0
AM	0	0	0	0	0

CONTROL

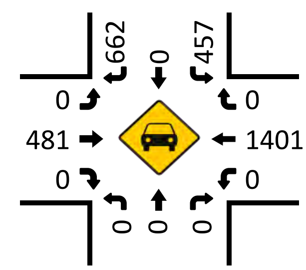
Signalized

	AM	NOON	PM
TEV	3242	0	2345
PHF	0.94		0.96

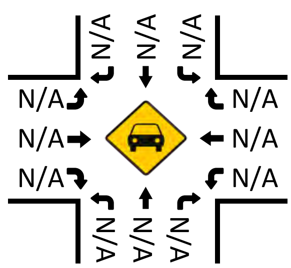
Cars (AM)



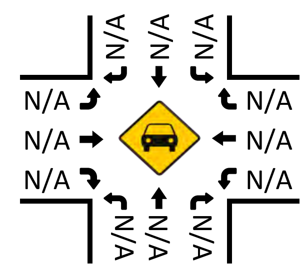
Cars (AM)



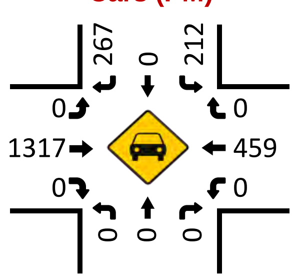
Cars (NOON)



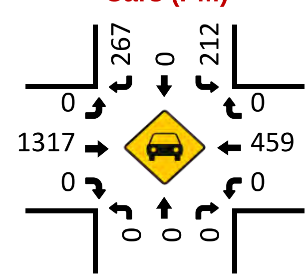
Cars (NOON)



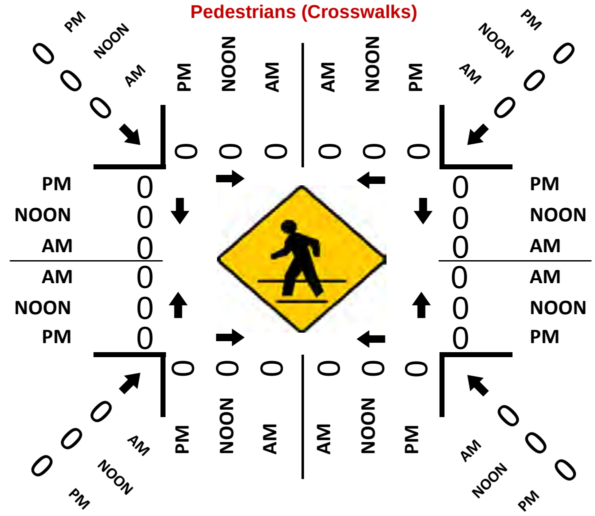
Cars (PM)



Cars (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB on-ramp & Arrow Hwy
City: Irwindale
Control: No Control

Project ID: 19-05193-002
Date: 4/10/2019

Total

NS/EW Streets:	I-605 NB on-ramp				I-605 NB on-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	106	49	0	0	426	83	0	664
7:15 AM	0	0	0	0	0	0	0	0	0	140	63	0	0	420	92	0	715
7:30 AM	0	0	0	0	0	0	0	0	0	174	65	0	0	385	74	0	698
7:45 AM	0	0	0	0	0	0	0	0	0	252	71	0	0	349	102	0	774
8:00 AM	0	0	0	0	0	0	0	0	0	210	58	0	0	303	84	0	655
8:15 AM	0	0	0	0	0	0	0	0	0	218	57	0	0	279	65	0	619
8:30 AM	0	0	0	0	0	0	0	0	0	209	48	0	0	265	52	0	574
8:45 AM	0	0	0	0	0	0	0	0	0	169	47	0	0	213	56	0	485
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1478	458	0	0	2640	608	0	5184
APPROACH %'s :									0.00%	76.34%	23.66%	0.00%	0.00%	81.28%	18.72%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	672	248	0	0	1580	351	0	2851
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.873	0.000	0.000	0.927	0.860	0.000	0.921
										0.712				0.943			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	340	24	0	0	97	57	0	518
4:15 PM	0	0	0	0	0	0	0	0	0	320	27	0	0	95	62	0	504
4:30 PM	0	0	0	0	0	0	0	0	0	332	30	0	0	106	63	0	531
4:45 PM	0	0	0	0	0	0	0	0	0	326	31	0	0	111	58	0	526
5:00 PM	0	0	0	0	0	0	0	0	0	380	29	0	0	104	61	0	574
5:15 PM	0	0	0	0	0	0	0	0	0	360	36	0	0	107	89	0	592
5:30 PM	0	0	0	0	0	0	0	0	0	365	40	0	0	117	65	0	587
5:45 PM	0	0	0	0	0	0	0	0	0	357	26	0	0	137	79	0	599
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	2780	243	0	0	874	534	0	4431
APPROACH %'s :									0.00%	91.96%	8.04%	0.00%	0.00%	62.07%	37.93%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1318	112	0	0	409	240	0	2079
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.969	0.903	0.000	0.000	0.921	0.952	0.000	0.979
										0.982				0.960			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB on-ramp & Arrow Hwy
City: Irwindale
Control: No Control

Project ID: 19-05193-002
Date: 4/10/2019

Cars

NS/EW Streets:	I-605 NB on-ramp				I-605 NB on-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	0	0	0	0	0	98	35	0	0	407	72	0	613
7:15 AM	0	0	1	0	0	0	0	0	0	133	50	0	0	402	80	0	666
7:30 AM	0	0	0	0	0	0	0	0	0	161	55	0	0	371	69	0	656
7:45 AM	0	0	3	0	0	0	0	0	0	239	56	0	0	329	94	0	721
8:00 AM	0	0	2	0	0	0	0	0	0	205	46	0	0	284	81	0	618
8:15 AM	0	0	2	0	0	0	0	0	0	205	45	0	0	249	64	0	565
8:30 AM	0	0	0	0	0	0	0	0	0	188	35	0	0	240	47	0	510
8:45 AM	0	0	1	0	0	0	0	0	0	152	38	0	0	197	51	0	439
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	10	0	0	0	0	0	0	1381	360	0	0	2479	558	0	4788
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	79.32%	20.68%	0.00%	0.00%	81.63%	18.37%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	5	0	0	0	0	0	0	631	196	0	0	1509	315	0	2656
PEAK HR FACTOR :	0.00	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.660	0.875	0.000	0.000	0.927	0.838	0.000	0.921
			0.417							0.701				0.946			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	0	0	0	0	0	331	20	0	0	87	56	0	495
4:15 PM	0	0	4	0	0	0	0	0	0	313	26	0	0	90	57	0	490
4:30 PM	0	0	6	0	0	0	0	0	0	321	22	0	0	103	62	0	514
4:45 PM	0	0	4	0	0	0	0	0	0	309	29	0	0	106	55	0	503
5:00 PM	0	0	10	0	0	0	0	0	0	366	28	0	0	102	61	0	567
5:15 PM	0	0	6	0	0	0	0	0	0	353	36	0	0	106	88	0	589
5:30 PM	0	0	1	0	0	0	0	0	0	349	39	0	0	115	63	0	567
5:45 PM	0	0	3	0	0	0	0	0	0	352	25	0	0	134	78	0	592
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	35	0	0	0	0	0	0	2694	225	0	0	843	520	0	4317
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%					0.00%	92.29%	7.71%	0.00%	0.00%	61.85%	38.15%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	15	0	0	0	0	0	0	1274	97	0	0	386	230	0	2002
PEAK HR FACTOR :	0.00	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.962	0.836	0.000	0.000	0.910	0.927	0.000	0.974
			0.625							0.976				0.933			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB on-ramp & Arrow Hwy
City: Irwindale
Control: No Control

Project ID: 19-05193-002
Date: 4/10/2019

2axle

NS/EW Streets:	I-605 NB on-ramp				I-605 NB on-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	5	1	0	0	7	7	0	20
7:15 AM	0	0	0	0	0	0	0	0	0	1	5	0	0	9	4	0	19
7:30 AM	0	0	0	0	0	0	0	0	0	4	3	0	0	5	4	0	16
7:45 AM	0	0	0	0	0	0	0	0	0	7	2	0	0	5	7	0	21
8:00 AM	0	0	0	0	0	0	0	0	0	3	2	0	0	3	2	0	10
8:15 AM	0	0	0	0	0	0	0	0	0	5	3	0	0	9	0	0	17
8:30 AM	0	0	0	0	0	0	0	0	0	3	2	0	0	7	1	0	13
8:45 AM	0	0	0	0	0	0	0	0	0	1	2	0	0	7	3	0	13
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	29	20	0	0	52	28	0	129
APPROACH %'s :									0.00%	59.18%	40.82%	0.00%	0.00%	65.00%	35.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	17	11	0	0	26	22	0	76
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.607	0.550	0.000	0.000	0.722	0.786	0.000	0.905
										0.778				0.857			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	5	1	0	0	8	0	0	14
4:15 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	3	0	9
4:30 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	2	1	0	8
4:45 PM	0	0	0	0	0	0	0	0	0	7	1	0	0	2	0	0	10
5:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0	4
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	31	2	0	0	20	6	0	59
APPROACH %'s :									0.00%	93.94%	6.06%	0.00%	0.00%	76.92%	23.08%	0.00%	
PEAK HR :	04:00 PM - 05:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	21	2	0	0	14	4	0	41
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.500	0.000	0.000	0.438	0.333	0.000	0.732
										0.719				0.563			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB on-ramp & Arrow Hwy
City: Irwindale
Control: No Control

Project ID: 19-05193-002
Date: 4/10/2019

3axle

NS/EW Streets:	I-605 NB on-ramp				I-605 NB on-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	6	1	0	14
7:15 AM	0	0	0	0	0	0	0	0	0	2	2	0	0	2	4	0	10
7:30 AM	0	0	0	0	0	0	0	0	0	3	3	0	0	1	0	0	7
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	3	0	0	5
8:15 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	4	0	0	8
8:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	2	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	13	18	0	0	22	5	0	58
APPROACH %'s :									0.00%	41.94%	58.06%	0.00%	0.00%	81.48%	18.52%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	5	14	0	0	11	5	0	35
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417	0.500	0.000	0.000	0.458	0.313	0.000	0.625
										0.679				0.571			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	18	1	0	0	2	0	0	21
APPROACH %'s :									0.00%	94.74%	5.26%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	**04:00 PM - 05:00 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	7	1	0	0	1	0	0	9
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.250	0.000	0.000	0.250	0.000	0.000	0.563
										0.500				0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB on-ramp & Arrow Hwy
City: Irwindale
Control: No Control

Project ID: 19-05193-002
Date: 4/10/2019

4axle

NS/EW Streets:	I-605 NB on-ramp				I-605 NB on-ramp				Arrow Hwy				Arrow Hwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	3	6	0	0	6	3	0	18
7:15 AM	0	0	0	0	0	0	0	0	0	4	6	0	0	7	4	0	21
7:30 AM	0	0	0	0	0	0	0	0	0	6	4	0	0	8	1	0	19
7:45 AM	0	0	0	0	0	0	0	0	0	6	11	0	0	13	1	0	31
8:00 AM	0	0	0	0	0	0	0	0	0	2	8	0	0	13	1	0	24
8:15 AM	0	0	0	0	0	0	0	0	0	5	8	0	0	17	1	0	31
8:30 AM	0	0	0	0	0	0	0	0	0	16	11	0	0	16	4	0	47
8:45 AM	0	0	0	0	0	0	0	0	0	13	6	0	0	7	2	0	28
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	55	60	0	0	87	17	0	219
APPROACH %'s :									0.00%	47.83%	52.17%	0.00%	0.00%	83.65%	16.35%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	19	27	0	0	34	9	0	89
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.792	0.614	0.000	0.000	0.654	0.563	0.000	0.718
										0.676				0.768			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	1	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	3	3	0	0	2	1	0	9
4:15 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	3	2	0	8
4:30 PM	0	0	0	0	0	0	0	0	0	3	7	0	0	1	0	0	11
4:45 PM	0	0	0	0	0	0	0	0	0	8	1	0	0	2	3	0	14
5:00 PM	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	9
5:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	7	1	0	0	0	1	0	9
5:45 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	0	1	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	37	15	0	0	9	8	0	69
APPROACH %'s :									0.00%	71.15%	28.85%	0.00%	0.00%	52.94%	47.06%	0.00%	
PEAK HR :	**04:00 PM - 05:00 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	16	12	0	0	8	6	0	42
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.429	0.000	0.000	0.667	0.500	0.000	0.750
										0.700				0.700			

Prepared by National Data & Surveying Services

I-605 NB on-ramp & Arrow Hwy

Peak Hour Turning Movement Count

ID: 19-05193-002
City: Irwindale

Day: Wednesday
Date: 04/10/2019

I-605 NB on-ramp

SOUTHBOUND

AM	0	0	0	0	351	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	240	PM

0 0 0 0

PEAK HOURS

07:00 AM - 08:00 AM	
NONE	
04:00 PM - 05:00 PM	

COUNT PERIODS

07:00 AM - 09:00 AM	
NONE	
04:00 PM - 06:00 PM	

Arrow Hwy

EASTBOUND

AM	NOON	PM	
1580	0	409	
0	0	0	0
0	0	0	0
672	0	1318	2
248	0	112	1
AM	NOON	PM	

CONTROL

No Control

	AM	NOON	PM
TEV	2851	0	2079
PHF	0.92		0.98

WESTBOUND

	PM	NOON	AM
1	240	0	351
2	409	0	1580
0	0	0	0
0	0	0	0
	1318	0	672
	PM	NOON	AM

Arrow Hwy

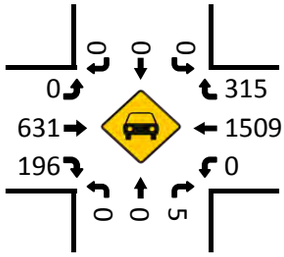
0 0 1 0

PM	112	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	248	0	0	0	0	AM

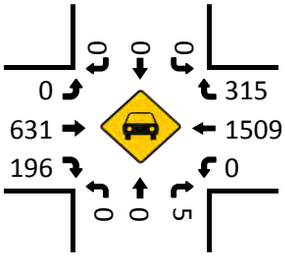
NORTHBOUND

I-605 NB on-ramp

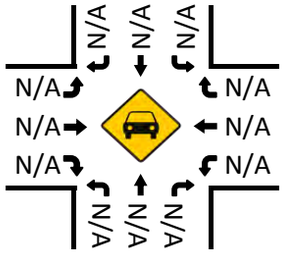
Cars (AM)



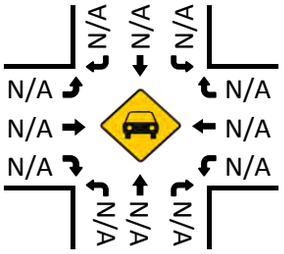
Cars (AM)



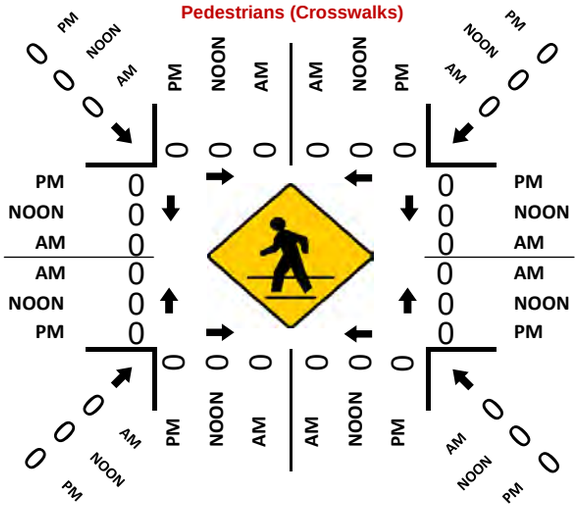
Cars (NOON)



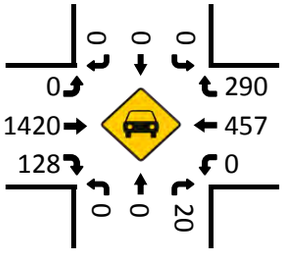
Cars (NOON)



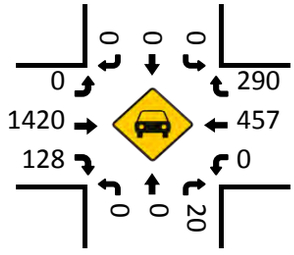
Pedestrians (Crosswalks)



Cars (PM)



Cars (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Arrow Hwy & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-003
Date: 4/10/2019

Total

NS/EW Streets:	Arrow Hwy				Arrow Hwy				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	16	447	0	0	0	63	43	0	42	0	2	0	0	0	0	0	613
7:15 AM	26	456	0	0	0	68	54	0	52	0	2	0	0	0	0	0	658
7:30 AM	45	418	0	0	0	118	78	0	52	0	2	0	0	0	0	0	713
7:45 AM	38	364	0	2	0	149	84	0	65	0	0	0	0	0	0	0	702
8:00 AM	23	343	0	0	0	123	92	0	46	0	2	0	0	0	0	0	629
8:15 AM	21	314	0	0	0	129	80	0	38	0	0	0	0	0	0	0	582
8:30 AM	11	262	0	0	0	124	76	0	30	0	1	0	0	0	0	0	504
8:45 AM	13	251	0	0	0	114	62	0	27	0	2	0	0	0	0	0	469
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	193	2855	0	2	0	888	569	0	352	0	11	0	0	0	0	0	4870
APPROACH %'s :	6.33%	93.61%	0.00%	0.07%	0.00%	60.95%	39.05%	0.00%	96.97%	0.00%	3.03%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	132	1581	0	2	0	458	308	0	215	0	6	0	0	0	0	0	2702
PEAK HR FACTOR :	0.733	0.867	0.000	0.250	0.000	0.768	0.837	0.000	0.827	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.947
	0.890				0.822				0.850								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	3	140	0	0	0	287	42	0	36	0	4	0	0	0	0	0	512
4:15 PM	1	98	0	0	0	269	59	0	46	0	2	0	0	0	0	0	475
4:30 PM	4	133	0	0	0	289	52	0	50	0	8	0	0	0	0	0	536
4:45 PM	4	105	0	0	0	278	38	0	49	0	5	0	0	0	0	0	479
5:00 PM	3	123	0	0	0	359	53	0	65	0	7	0	0	0	0	0	610
5:15 PM	6	114	0	0	0	301	48	0	48	0	7	0	0	0	0	0	524
5:30 PM	9	141	0	0	0	309	67	0	58	0	8	0	0	0	0	0	592
5:45 PM	5	107	0	0	0	311	39	0	41	0	5	0	0	0	0	0	508
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	35	961	0	0	0	2403	398	0	393	0	46	0	0	0	0	0	4236
APPROACH %'s :	3.51%	96.49%	0.00%	0.00%	0.00%	85.79%	14.21%	0.00%	89.52%	0.00%	10.48%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	23	485	0	0	0	1280	207	0	212	0	27	0	0	0	0	0	2234
PEAK HR FACTOR :	0.639	0.860	0.000	0.000	0.000	0.891	0.772	0.000	0.815	0.000	0.844	0.000	0.000	0.000	0.000	0.000	0.916
	0.847				0.902				0.830								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Arrow Hwy & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-003
Date: 4/10/2019

Cars

NS/EW Streets:	Arrow Hwy				Arrow Hwy				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	15	432	0	0	0	59	37	0	28	0	2	0	0	0	0	0	573
7:15 AM	23	442	0	0	0	67	48	0	35	0	0	0	0	0	0	0	615
7:30 AM	45	414	0	0	0	107	72	0	38	0	1	0	0	0	0	0	677
7:45 AM	37	355	0	2	0	139	83	0	48	0	0	0	0	0	0	0	664
8:00 AM	23	335	0	0	0	116	90	0	28	0	1	0	0	0	0	0	593
8:15 AM	20	295	0	0	0	119	74	0	18	0	0	0	0	0	0	0	526
8:30 AM	11	255	0	0	0	117	61	0	21	0	1	0	0	0	0	0	466
8:45 AM	13	240	0	0	0	103	51	0	16	0	2	0	0	0	0	0	425
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	187	2768	0	2	0	827	516	0	232	0	7	0	0	0	0	0	4539
APPROACH %'s :	6.32%	93.61%	0.00%	0.07%	0.00%	61.58%	38.42%	0.00%	97.07%	0.00%	2.93%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	128	1546	0	2	0	429	293	0	149	0	2	0	0	0	0	0	2549
PEAK HR FACTOR :	0.71	0.874	0.000	0.250	0.000	0.772	0.814	0.000	0.776	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.941
		0.901				0.813				0.786							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	133	0	0	0	282	41	0	33	0	4	0	0	0	0	0	495
4:15 PM	0	92	0	0	0	260	56	0	44	0	2	0	0	0	0	0	454
4:30 PM	2	130	0	0	0	281	47	0	47	0	8	0	0	0	0	0	515
4:45 PM	2	103	0	0	0	265	35	0	45	0	4	0	0	0	0	0	454
5:00 PM	3	121	0	0	0	352	49	0	63	0	7	0	0	0	0	0	595
5:15 PM	1	113	0	0	0	295	45	0	47	0	7	0	0	0	0	0	508
5:30 PM	3	139	0	0	0	294	62	0	55	0	8	0	0	0	0	0	561
5:45 PM	1	106	0	0	0	309	39	0	39	0	5	0	0	0	0	0	499
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	937	0	0	0	2338	374	0	373	0	45	0	0	0	0	0	4081
APPROACH %'s :	1.47%	98.53%	0.00%	0.00%	0.00%	86.21%	13.79%	0.00%	89.23%	0.00%	10.77%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	8	479	0	0	0	1250	195	0	204	0	27	0	0	0	0	0	2163
PEAK HR FACTOR :	0.67	0.862	0.000	0.000	0.000	0.888	0.786	0.000	0.810	0.000	0.844	0.000	0.000	0.000	0.000	0.000	0.909
		0.857				0.901				0.825							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Arrow Hwy & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-003
Date: 4/10/2019

2axle

NS/EW Streets:	Arrow Hwy				Arrow Hwy				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	8	0	0	0	3	2	0	3	0	0	0	0	0	0	0	16
7:15 AM	1	9	0	0	0	1	0	0	6	0	1	0	0	0	0	0	18
7:30 AM	0	3	0	0	0	5	1	0	2	0	0	0	0	0	0	0	11
7:45 AM	1	5	0	0	0	4	0	0	5	0	0	0	0	0	0	0	15
8:00 AM	0	5	0	0	0	3	1	0	0	0	1	0	0	0	0	0	10
8:15 AM	0	11	0	0	0	5	2	0	1	0	0	0	0	0	0	0	19
8:30 AM	0	5	0	0	0	2	0	0	1	0	0	0	0	0	0	0	8
8:45 AM	0	8	0	0	0	4	1	0	1	0	0	0	0	0	0	0	14
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	54	0	0	0	27	7	0	19	0	2	0	0	0	0	0	111
APPROACH %'s :	3.57%	96.43%	0.00%	0.00%	0.00%	79.41%	20.59%	0.00%	90.48%	0.00%	9.52%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	2	22	0	0	0	13	2	0	13	0	2	0	0	0	0	0	54
PEAK HR FACTOR :	0.500	0.611	0.000	0.000	0.000	0.650	0.500	0.000	0.542	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.750
	0.600				0.625				0.536								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	0	0	0	2	1	0	2	0	0	0	0	0	0	0	8
4:15 PM	0	4	0	0	0	5	1	0	0	0	0	0	0	0	0	0	10
4:30 PM	0	2	0	0	0	5	1	0	1	0	0	0	0	0	0	0	9
4:45 PM	0	0	0	0	0	5	1	0	1	0	0	0	0	0	0	0	7
5:00 PM	0	2	0	0	0	3	1	0	0	0	0	0	0	0	0	0	6
5:15 PM	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	4
5:30 PM	0	2	0	0	0	5	3	0	2	0	0	0	0	0	0	0	12
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	15	0	0	0	27	10	0	6	0	0	0	0	0	0	0	58
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	72.97%	27.03%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	6	0	0	0	10	6	0	2	0	0	0	0	0	0	0	24
PEAK HR FACTOR :	0.00	0.750	0.000	0.000	0.000	0.500	0.500	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
	0.750				0.500				0.250								

National Data & Surveying Services

Intersection Turning Movement Count

Location: Arrow Hwy & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-003
Date: 4/10/2019

3axle

NS/EW Streets:	Arrow Hwy				Arrow Hwy				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	5	0	0	0	1	1	0	1	0	0	0	0	0	0	0	8
7:15 AM	0	4	0	0	0	0	2	0	3	0	0	0	0	0	0	0	9
7:30 AM	0	0	0	0	0	3	2	0	0	0	0	0	0	0	0	0	5
7:45 AM	0	3	0	0	0	1	1	0	0	0	0	0	0	0	0	0	5
8:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
8:15 AM	0	4	0	0	0	2	0	0	2	0	0	0	0	0	0	0	8
8:30 AM	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	0	4
8:45 AM	0	2	0	0	0	1	2	0	1	0	0	0	0	0	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	22	0	0	0	10	10	0	7	0	0	0	0	0	0	0	49
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	10	0	0	0	5	5	0	3	0	0	0	0	0	0	0	23
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.000	0.417	0.625	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.639
		0.625				0.500				0.250							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	1	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	4
4:30 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
4:45 PM	2	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0	6
5:00 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
5:15 PM	5	0	0	0	0	3	1	0	0	0	0	0	0	0	0	0	9
5:30 PM	6	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	10
5:45 PM	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	21	2	0	0	0	13	2	0	4	0	0	0	0	0	0	0	42
APPROACH %'s :	91.30%	8.70%	0.00%	0.00%	0.00%	86.67%	13.33%	0.00%	100.00%	0.00%	0.00%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	15	0	0	0	0	8	1	0	2	0	0	0	0	0	0	0	26
PEAK HR FACTOR :	0.63	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.650
		0.625				0.563				0.500							

National Data & Surveying Services

Intersection Turning Movement Count

Location: Arrow Hwy & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-003
Date: 4/10/2019

4axle

NS/EW Streets:	Arrow Hwy				Arrow Hwy				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	2	0	0	0	0	3	0	10	0	0	0	0	0	0	0	16
7:15 AM	2	1	0	0	0	0	4	0	8	0	1	0	0	0	0	0	16
7:30 AM	0	1	0	0	0	3	3	0	12	0	1	0	0	0	0	0	20
7:45 AM	0	1	0	0	0	5	0	0	12	0	0	0	0	0	0	0	18
8:00 AM	0	0	0	0	0	3	1	0	18	0	0	0	0	0	0	0	22
8:15 AM	1	4	0	0	0	3	4	0	17	0	0	0	0	0	0	0	29
8:30 AM	0	1	0	0	0	4	13	0	8	0	0	0	0	0	0	0	26
8:45 AM	0	1	0	0	0	6	8	0	9	0	0	0	0	0	0	0	24
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	11	0	0	0	24	36	0	94	0	2	0	0	0	0	0	171
APPROACH %'s :	26.67%	73.33%	0.00%	0.00%	0.00%	40.00%	60.00%	0.00%	97.92%	0.00%	2.08%	0.00%					
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	2	3	0	0	0	11	8	0	50	0	2	0	0	0	0	0	76
PEAK HR FACTOR :	0.250	0.750	0.000	0.000	0.000	0.550	0.500	0.000	0.694	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.864
	0.417				0.792				0.722								

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	2	0	0	0	2	1	0	2	0	1	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	4	0	0	0	2	0	0	1	0	0	0	0	0	0	0	7
4:15 PM	0	2	0	0	0	3	1	0	1	0	0	0	0	0	0	0	7
4:30 PM	0	1	0	0	0	1	4	0	2	0	0	0	0	0	0	0	8
4:45 PM	0	0	0	0	0	7	2	0	2	0	1	0	0	0	0	0	12
5:00 PM	0	0	0	0	0	3	3	0	1	0	0	0	0	0	0	0	7
5:15 PM	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	3
5:30 PM	0	0	0	0	0	6	2	0	1	0	0	0	0	0	0	0	9
5:45 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	7	0	0	0	25	12	0	10	0	1	0	0	0	0	0	55
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	67.57%	32.43%	0.00%	90.91%	0.00%	9.09%	0.00%					
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	12	5	0	4	0	0	0	0	0	0	0	21
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.500	0.417	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583
					0.531				1.000								

Prepared by National Data & Surveying Services

Arrow Hwy & Rivergrade Rd

Peak Hour Turning Movement Count

ID: 19-05193-003
City: Irwindale

Day: Wednesday
Date: 04/10/2019

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	05:00 PM - 06:00 PM	04:00 PM - 06:00 PM

Arrow Hwy — SOUTHBOUND

	Right	Thru	Left	U-Turn	Total
AM	308	458	0	0	1796
NOON	0	0	0	0	0
PM	207	1280	0	0	697
	1	2	0	0	

Rivergrade Rd — EASTBOUND

	AM	NOON	PM	
Total	440	0	230	
U-Turn	0	0	0	0
Left	215	0	212	2
Thru	0	0	0	0
Right	6	0	27	1

Rivergrade Rd — WESTBOUND

		PM	NOON	AM
Right	0	0	0	0
Thru	0	0	0	0
Left	0	0	0	0
U-Turn	0	0	0	0
Total		0	0	0

Arrow Hwy — NORTHBOUND

	Total	U-Turn	Left	Thru	Right
		0	1	2	0
PM	1307	0	23	485	0
NOON	0	0	0	0	0
AM	466	2	132	1581	0

CONTROL

Signalized

	AM	NOON	PM
TEV	2702	0	2234
PHF	0.95		0.92

Cars (AM)

Approach	Left	Thru	Right	U-Turn
Southbound	0	429	293	
Eastbound	149	0	2	
Westbound	0	0	0	
Northbound	128	1546	0	

Cars (NOON)

Approach	Left	Thru	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Cars (PM)

Approach	Left	Thru	Right
Southbound	0	1250	195
Eastbound	204	0	27
Westbound	0	0	0
Northbound	8	479	0

Cars (AM): 293, 429, 0; 149, 0, 2; 0, 0, 0; 128, 1546, 0
Cars (NOON): N/A
Cars (PM): 195, 1250, 0; 204, 0, 27; 0, 0, 0; 8, 479, 0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0	0	0
South leg	0	0	0
East leg	0	0	0
West leg	0	0	0
Diagonals (each)	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Stewart Ave & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-004
Date: 4/10/2019

Total

NS/EW Streets:	Stewart Ave				Stewart Ave				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	3	22	0	1	0	0	0	6	24	2	0	15	40	5	0	119
7:15 AM	0	1	28	0	2	1	1	0	3	22	2	0	17	53	1	0	131
7:30 AM	1	2	27	0	2	1	4	0	4	27	0	0	22	95	1	0	186
7:45 AM	1	1	39	0	3	2	1	0	8	27	0	0	24	88	7	0	201
8:00 AM	0	2	26	0	0	4	1	0	5	27	7	0	31	83	6	0	192
8:15 AM	0	2	17	0	1	0	0	0	6	27	6	0	25	71	1	0	156
8:30 AM	1	3	12	0	1	1	2	0	0	19	2	0	19	73	2	0	135
8:45 AM	1	2	10	0	2	0	3	0	4	14	6	0	8	55	2	0	107
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	16	181	0	12	9	12	0	36	187	25	0	161	558	25	0	1227
APPROACH %'s :	2.48%	7.92%	89.60%	0.00%	36.36%	27.27%	36.36%	0.00%	14.52%	75.40%	10.08%	0.00%	21.64%	75.00%	3.36%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	2	7	109	0	6	7	6	0	23	108	13	0	102	337	15	0	735
PEAK HR FACTOR :	0.500	0.875	0.699	0.000	0.500	0.438	0.375	0.000	0.719	1.000	0.464	0.000	0.823	0.887	0.536	0.000	0.914
	0.720				0.679				0.923				0.946				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	11	0	2	4	5	0	2	28	6	0	23	14	4	0	100
4:15 PM	0	0	13	0	3	0	3	0	3	33	4	0	41	13	2	0	115
4:30 PM	1	1	15	0	6	8	4	0	0	39	4	0	40	20	5	0	143
4:45 PM	1	1	17	0	4	5	11	0	3	30	7	0	35	12	2	0	128
5:00 PM	1	0	14	0	3	1	4	0	2	54	15	0	35	11	2	0	142
5:15 PM	2	2	15	0	5	0	1	0	1	43	8	0	47	13	2	0	139
5:30 PM	0	0	24	0	2	4	5	0	6	33	5	0	52	15	4	0	150
5:45 PM	2	0	18	0	3	1	1	0	3	27	6	0	38	11	2	0	112
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	4	127	0	28	23	34	0	20	287	55	0	311	109	23	0	1029
APPROACH %'s :	5.76%	2.88%	91.37%	0.00%	32.94%	27.06%	40.00%	0.00%	5.52%	79.28%	15.19%	0.00%	70.20%	24.60%	5.19%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	4	3	70	0	14	10	21	0	12	160	35	0	169	51	10	0	559
PEAK HR FACTOR :	0.500	0.375	0.729	0.000	0.700	0.500	0.477	0.000	0.500	0.741	0.583	0.000	0.813	0.850	0.625	0.000	0.932
	0.802				0.563				0.729				0.810				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Stewart Ave & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-004
Date: 4/10/2019

Cars

NS/EW Streets:	Stewart Ave				Stewart Ave				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	3	21	0	0	0	0	0	6	10	1	0	14	37	3	0	96
7:15 AM	0	1	28	0	0	1	0	0	2	7	2	0	16	45	1	0	103
7:30 AM	1	1	27	0	0	1	0	0	4	15	0	0	20	90	1	0	160
7:45 AM	1	1	39	0	0	0	0	0	7	14	0	0	24	86	7	0	179
8:00 AM	0	2	24	0	0	4	0	0	3	8	5	0	31	79	6	0	162
8:15 AM	0	2	17	0	0	0	0	0	3	9	5	0	24	66	1	0	127
8:30 AM	1	2	11	0	0	1	0	0	0	10	2	0	19	60	0	0	106
8:45 AM	1	1	9	0	0	0	0	0	2	7	3	0	8	47	1	0	79
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	13	176	0	0	7	0	0	27	80	18	0	156	510	20	0	1012
APPROACH %'s :	2.58%	6.70%	90.72%	0.00%	0.00%	100.00%	0.00%	0.00%	21.60%	64.00%	14.40%	0.00%	22.74%	74.34%	2.92%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	2	6	107	0	0	5	0	0	17	46	10	0	99	321	15	0	628
PEAK HR FACTOR :	0.50	0.750	0.686	0.000	0.000	0.313	0.000	0.000	0.607	0.767	0.500	0.000	0.798	0.892	0.536	0.000	0.877
		0.701				0.313				0.869				0.929			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	11	0	0	2	4	0	0	24	5	0	21	13	2	0	83
4:15 PM	0	0	13	0	2	0	2	0	0	32	4	0	40	12	2	0	107
4:30 PM	1	1	15	0	4	8	4	0	0	37	3	0	37	17	3	0	130
4:45 PM	1	0	17	0	3	4	10	0	2	29	6	0	33	10	1	0	116
5:00 PM	1	0	14	0	2	1	3	0	1	54	14	0	35	9	2	0	136
5:15 PM	1	2	15	0	3	0	1	0	1	43	4	0	40	13	2	0	125
5:30 PM	0	0	23	0	2	3	5	0	2	32	5	0	45	11	2	0	130
5:45 PM	1	0	18	0	1	1	1	0	3	25	5	0	34	11	0	0	100
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	6	3	126	0	17	19	30	0	9	276	46	0	285	96	14	0	927
APPROACH %'s :	4.44%	2.22%	93.33%	0.00%	25.76%	28.79%	45.45%	0.00%	2.72%	83.38%	13.90%	0.00%	72.15%	24.30%	3.54%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	3	2	69	0	10	8	19	0	6	158	29	0	153	43	7	0	507
PEAK HR FACTOR :	0.75	0.250	0.750	0.000	0.833	0.500	0.475	0.000	0.750	0.731	0.518	0.000	0.850	0.827	0.875	0.000	0.932
		0.804				0.544				0.699				0.875			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Stewart Ave & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-004
Date: 4/10/2019

2axle

NS/EW Streets:	Stewart Ave				Stewart Ave				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	0	0	0	0	0	2	0	0	0	1	0	0	4
7:15 AM	0	0	0	0	0	0	0	0	0	7	0	0	1	1	0	0	9
7:30 AM	0	1	0	0	2	0	1	0	0	0	0	0	1	0	0	0	5
7:45 AM	0	0	0	0	2	2	1	0	1	2	0	0	0	1	0	0	9
8:00 AM	0	0	1	0	0	0	1	0	0	1	1	0	0	1	0	0	5
8:15 AM	0	0	0	0	0	0	0	0	1	1	1	0	1	1	0	0	5
8:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	1	1	0	0	0	2	0	1	0	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	2	4	0	4	2	5	0	3	13	2	0	3	5	0	0	43
APPROACH %'s :	0.00%	33.33%	66.67%	0.00%	36.36%	18.18%	45.45%	0.00%	16.67%	72.22%	11.11%	0.00%	37.50%	62.50%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	1	1	0	4	2	3	0	2	4	2	0	2	3	0	0	24
PEAK HR FACTOR :	0.000	0.250	0.250	0.000	0.500	0.250	0.750	0.000	0.500	0.500	0.500	0.000	0.500	0.750	0.000	0.000	0.667
		0.500				0.450				0.667				0.625			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	2	2	1	0	1	0	1	0	7
4:15 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2
4:45 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
5:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	3	0	0	0	5
5:30 PM	0	0	1	0	0	0	0	0	3	0	0	0	0	2	0	0	6
5:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	1	0	3	0	1	0	6	2	4	0	4	3	3	0	29
APPROACH %'s :	33.33%	33.33%	33.33%	0.00%	75.00%	0.00%	25.00%	0.00%	50.00%	16.67%	33.33%	0.00%	40.00%	30.00%	30.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	1	1	1	0	1	0	0	0	3	0	2	0	3	3	0	0	15
PEAK HR FACTOR :	0.25	0.250	0.250	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.375	0.000	0.000	0.625
		0.750				0.250				0.417				0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Stewart Ave & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-004
Date: 4/10/2019

3axle

NS/EW Streets:	Stewart Ave				Stewart Ave				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3
7:15 AM	0	0	0	0	0	0	1	0	0	2	0	0	0	2	0	0	5
7:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	1	0	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	2	0	0	7	1	0	0	9	1	0	20
APPROACH %'s :					0.00%	0.00%	100.00%	0.00%	0.00%	87.50%	12.50%	0.00%	0.00%	90.00%	10.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	2	1	0	0	3	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.375	0.000	0.000	0.583
					0.250				0.375				0.375				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	0	4
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	7	1	0	0	8
5:45 PM	1	0	0	0	0	0	0	0	0	1	0	0	4	0	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	1	0	0	0	1	3	1	0	21	3	0	0	31
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	20.00%	60.00%	20.00%	0.00%	87.50%	12.50%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	1	0	13	1	0	0	16
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.464	0.250	0.000	0.000	0.500
					0.250				0.250				0.438				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Stewart Ave & Rivergrade Rd
City: Irwindale
Control: Signalized

Project ID: 19-05193-004
Date: 4/10/2019

4axle

NS/EW Streets:	Stewart Ave				Stewart Ave				Rivergrade Rd				Rivergrade Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	1	0	0	0	0	10	1	0	1	1	2	0	16
7:15 AM	0	0	0	0	2	0	0	0	1	6	0	0	0	5	0	0	14
7:30 AM	0	0	0	0	0	0	2	0	0	12	0	0	1	3	0	0	18
7:45 AM	0	0	0	0	1	0	0	0	0	11	0	0	0	1	0	0	13
8:00 AM	0	0	1	0	0	0	0	0	2	18	0	0	0	2	0	0	23
8:15 AM	0	0	0	0	1	0	0	0	2	15	0	0	0	4	0	0	22
8:30 AM	0	1	0	0	1	0	2	0	0	8	0	0	0	11	1	0	24
8:45 AM	0	0	0	0	2	0	1	0	1	7	3	0	0	7	1	0	22
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	1	0	8	0	5	0	6	87	4	0	2	34	4	0	152
APPROACH %'s :	0.00%	50.00%	50.00%	0.00%	61.54%	0.00%	38.46%	0.00%	6.19%	89.69%	4.12%	0.00%	5.00%	85.00%	10.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	0	1	0	2	0	2	0	4	56	0	0	1	10	0	0	76
PEAK HR FACTOR :	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.500	0.778	0.000	0.000	0.250	0.625	0.000	0.000	0.826
	0.250				0.500				0.750				0.688				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	0	0	0.5	1	0.5	0	1	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	2	2	1	0	0	2	0	0	0	0	1	0	8
4:15 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	0	3
4:30 PM	0	0	0	0	2	0	0	0	0	1	0	0	1	2	1	0	7
4:45 PM	0	0	0	0	1	1	1	0	1	1	0	0	0	1	1	0	7
5:00 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	2	0	0	4
5:15 PM	0	0	0	0	1	0	0	0	0	0	3	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2	0	6
5:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	7	4	3	0	4	6	4	0	1	7	6	0	42
APPROACH %'s :					50.00%	28.57%	21.43%	0.00%	28.57%	42.86%	28.57%	0.00%	7.14%	50.00%	42.86%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	2	2	2	0	3	2	3	0	0	4	3	0	21
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.500	0.500	0.500	0.000	0.750	0.500	0.250	0.000	0.000	0.500	0.375	0.000	0.750
					0.500				0.667				0.583				

Prepared by National Data & Surveying Services

Stewart Ave & Rivergrade Rd

Peak Hour Turning Movement Count

ID: 19-05193-004
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

Stewart Ave — SOUTHBOUND

AM	6	7	6	0	45
NOON	0	0	0	0	0
PM	21	10	14	0	25
	0.5	1	0.5	0	

Rivergrade Rd — EASTBOUND

AM	NOON	PM	
345	0	76	
0	0	0	0
23	0	12	1
108	0	160	2
13	0	35	0

Rivergrade Rd — WESTBOUND

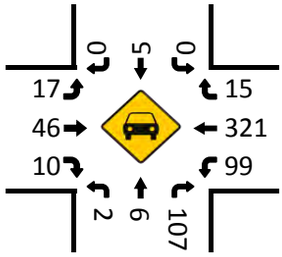
	PM	NOON	AM
0	10	0	15
2	51	0	337
1	169	0	102
0	0	0	0
	244	0	223

Stewart Ave — NORTHBOUND

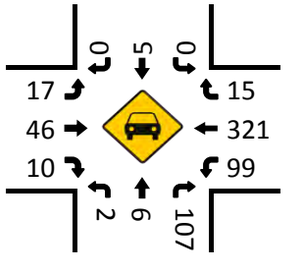
PM	214	0	4	3	70
NOON	0	0	0	0	0
AM	122	0	2	7	109
		0	1	1	0

CONTROL			
Signalized			
TEV	735	0	559
	AM	NOON	PM
PHF	0.91		0.93

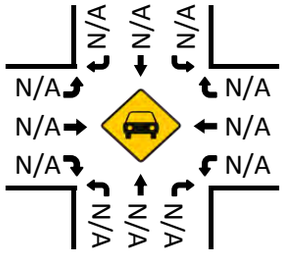
Cars (AM)



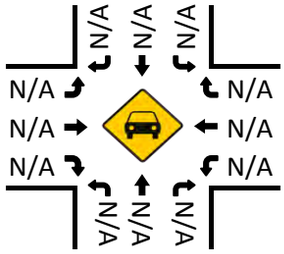
Cars (AM)



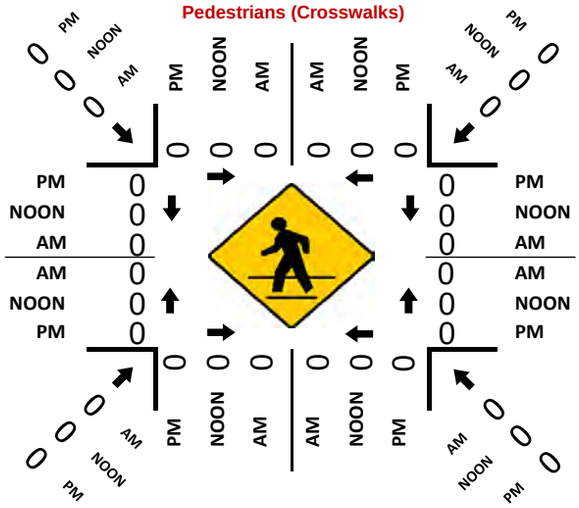
Cars (NOON)



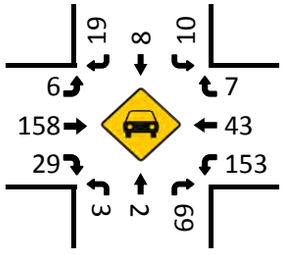
Cars (NOON)



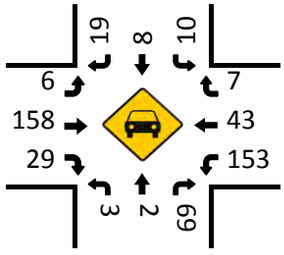
Pedestrians (Crosswalks)



Cars (PM)



Cars (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB On-ramp & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-005
Date: 4/10/2019

Total

NS/EW Streets:	I-605 SB On-ramp				I-605 SB On-ramp				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	38	101	0	170	293	0	0	602
7:15 AM	0	0	0	0	0	0	0	0	0	63	93	0	127	332	0	0	615
7:30 AM	0	0	0	0	0	0	0	0	0	67	98	0	94	340	0	0	599
7:45 AM	0	0	0	0	0	0	0	0	0	100	118	0	104	323	0	0	645
8:00 AM	0	0	0	0	0	0	0	0	0	95	117	0	102	288	0	0	602
8:15 AM	0	0	0	0	0	0	0	0	0	110	113	0	96	255	0	1	575
8:30 AM	0	0	0	0	0	0	0	0	0	96	139	0	103	292	0	0	630
8:45 AM	0	0	0	0	0	0	0	0	0	107	115	0	86	251	0	1	560
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	676	894	0	882	2374	0	2	4828
APPROACH %'s :									0.00%	43.06%	56.94%	0.00%	27.07%	72.87%	0.00%	0.06%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	268	410	0	495	1288	0	0	2461
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.670	0.869	0.000	0.728	0.947	0.000	0.000	0.954
										0.778				0.963			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	203	245	0	120	201	0	1	770
4:15 PM	0	0	0	0	0	0	0	0	0	218	237	0	117	211	0	4	787
4:30 PM	0	0	0	0	0	0	0	0	0	256	277	0	142	199	0	1	875
4:45 PM	0	0	0	0	0	0	0	0	0	242	281	0	119	207	0	0	849
5:00 PM	0	0	0	0	0	0	0	0	0	222	320	0	153	247	0	1	943
5:15 PM	0	0	0	0	0	0	0	0	0	272	316	0	134	228	0	2	952
5:30 PM	0	0	0	0	0	0	0	0	0	258	280	0	110	232	0	2	882
5:45 PM	0	0	0	0	0	0	0	0	0	243	303	0	103	186	0	2	837
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1914	2259	0	998	1711	0	13	6895
APPROACH %'s :									0.00%	45.87%	54.13%	0.00%	36.66%	62.86%	0.00%	0.48%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	994	1197	0	516	914	0	5	3626
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.914	0.935	0.000	0.843	0.925	0.000	0.625	0.952
										0.932				0.895			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB On-ramp & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-005
Date: 4/10/2019

Cars

NS/EW Streets:	I-605 SB On-ramp				I-605 SB On-ramp				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	31	80	0	146	269	0	0	526
7:15 AM	0	0	0	0	0	0	0	0	0	53	74	0	104	307	0	0	538
7:30 AM	0	0	0	0	0	0	0	0	0	59	76	0	79	312	0	0	526
7:45 AM	0	0	0	0	0	0	0	0	0	94	100	0	80	309	0	0	583
8:00 AM	0	0	0	0	0	0	0	0	0	89	94	0	86	256	0	0	525
8:15 AM	0	0	0	0	0	0	0	0	0	100	91	0	74	233	0	1	499
8:30 AM	0	0	0	0	0	0	0	0	0	91	107	0	75	263	0	0	536
8:45 AM	0	0	0	0	0	0	0	0	0	91	90	0	53	226	0	1	461
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	608	712	0	697	2175	0	2	4194
APPROACH %'s :									0.00%	46.06%	53.94%	0.00%	24.25%	75.68%	0.00%	0.07%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	237	330	0	409	1197	0	0	2173
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.630	0.825	0.000	0.700	0.959	0.000	0.000	0.932
										0.731				0.967			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	196	228	0	109	178	0	1	712
4:15 PM	0	0	0	0	0	0	0	0	0	209	226	0	103	193	0	4	735
4:30 PM	0	0	0	0	0	0	0	0	0	248	262	0	136	180	0	1	827
4:45 PM	0	0	0	0	0	0	0	0	0	230	268	0	117	195	0	0	810
5:00 PM	0	0	0	0	0	0	0	0	0	216	306	0	150	228	0	1	901
5:15 PM	0	0	0	0	0	0	0	0	0	267	299	0	128	219	0	2	915
5:30 PM	0	0	0	0	0	0	0	0	0	251	272	0	107	222	0	2	854
5:45 PM	0	0	0	0	0	0	0	0	0	238	290	0	98	173	0	2	801
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	1855	2151	0	948	1588	0	13	6555
APPROACH %'s :									0.00%	46.31%	53.69%	0.00%	37.19%	62.30%	0.00%	0.51%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	964	1145	0	502	864	0	5	3480
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.903	0.935	0.000	0.837	0.947	0.000	0.625	0.951
										0.932				0.904			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB On-ramp & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-005
Date: 4/10/2019

2axle

NS/EW Streets:	I-605 SB On-ramp				I-605 SB On-ramp				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	2	6	0	9	7	0	0	24
7:15 AM	0	0	0	0	0	0	0	0	0	3	5	0	7	11	0	0	26
7:30 AM	0	0	0	0	0	0	0	0	0	2	2	0	4	8	0	0	16
7:45 AM	0	0	0	0	0	0	0	0	0	1	4	0	1	4	0	0	10
8:00 AM	0	0	0	0	0	0	0	0	0	0	7	0	4	13	0	0	24
8:15 AM	0	0	0	0	0	0	0	0	0	5	5	0	6	4	0	0	20
8:30 AM	0	0	0	0	0	0	0	0	0	1	7	0	7	8	0	0	23
8:45 AM	0	0	0	0	0	0	0	0	0	3	3	0	4	6	0	0	16
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	17	39	0	42	61	0	0	159
APPROACH %'s :									0.00%	30.36%	69.64%	0.00%	40.78%	59.22%	0.00%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	8	17	0	21	30	0	0	76
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.708	0.000	0.583	0.682	0.000	0.000	0.731
										0.781				0.708			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	4	8	0	3	6	0	0	21
4:15 PM	0	0	0	0	0	0	0	0	0	5	6	0	5	3	0	0	19
4:30 PM	0	0	0	0	0	0	0	0	0	5	4	0	1	4	0	0	14
4:45 PM	0	0	0	0	0	0	0	0	0	6	3	0	0	4	0	0	13
5:00 PM	0	0	0	0	0	0	0	0	0	3	6	0	1	3	0	0	13
5:15 PM	0	0	0	0	0	0	0	0	0	2	8	0	2	0	0	0	12
5:30 PM	0	0	0	0	0	0	0	0	0	1	3	0	1	3	0	0	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	4	0	1	4	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	26	42	0	14	27	0	0	109
APPROACH %'s :									0.00%	38.24%	61.76%	0.00%	34.15%	65.85%	0.00%	0.00%	
PEAK HR :	**04:45 PM - 05:45 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	12	20	0	4	10	0	0	46
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.625	0.000	0.500	0.625	0.000	0.000	0.885
										0.800				0.875			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB On-ramp & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-005
Date: 4/10/2019

3axle

NS/EW Streets:	I-605 SB On-ramp				I-605 SB On-ramp				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	1	7	0	3	5	0	0	16
7:15 AM	0	0	0	0	0	0	0	0	0	1	7	0	5	6	0	0	19
7:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	2	5	0	0	13
7:45 AM	0	0	0	0	0	0	0	0	0	1	4	0	5	4	0	0	14
8:00 AM	0	0	0	0	0	0	0	0	0	4	4	0	2	7	0	0	17
8:15 AM	0	0	0	0	0	0	0	0	0	1	6	0	2	3	0	0	12
8:30 AM	0	0	0	0	0	0	0	0	0	1	9	0	4	6	0	0	20
8:45 AM	0	0	0	0	0	0	0	0	0	4	2	0	0	5	0	0	11
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	13	45	0	23	41	0	0	122
APPROACH %'s :									0.00%	22.41%	77.59%	0.00%	35.94%	64.06%	0.00%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	3	24	0	15	20	0	0	62
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.857	0.000	0.750	0.833	0.000	0.000	0.816
										0.844				0.795			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	3	9	0	0	14
4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	1	7	0	0	10
4:30 PM	0	0	0	0	0	0	0	0	0	1	8	0	2	9	0	0	20
4:45 PM	0	0	0	0	0	0	0	0	0	3	5	0	0	2	0	0	10
5:00 PM	0	0	0	0	0	0	0	0	0	2	4	0	0	7	0	0	13
5:15 PM	0	0	0	0	0	0	0	0	0	1	4	0	1	5	0	0	11
5:30 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	2	0	0	5
5:45 PM	0	0	0	0	0	0	0	0	0	2	3	0	3	3	0	0	11
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	13	27	0	10	44	0	0	94
APPROACH %'s :									0.00%	32.50%	67.50%	0.00%	18.52%	81.48%	0.00%	0.00%	
PEAK HR :	**04:45 PM - 05:45 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	8	14	0	1	16	0	0	39
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.667	0.700	0.000	0.250	0.571	0.000	0.000	0.750
										0.688				0.607			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB On-ramp & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-005
Date: 4/10/2019

4axle

NS/EW Streets:	I-605 SB On-ramp				I-605 SB On-ramp				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	4	8	0	12	12	0	0	36
7:15 AM	0	0	0	0	0	0	0	0	0	6	7	0	11	8	0	0	32
7:30 AM	0	0	0	0	0	0	0	0	0	6	14	0	9	15	0	0	44
7:45 AM	0	0	0	0	0	0	0	0	0	4	10	0	18	6	0	0	38
8:00 AM	0	0	0	0	0	0	0	0	0	2	12	0	10	12	0	0	36
8:15 AM	0	0	0	0	0	0	0	0	0	4	11	0	14	15	0	0	44
8:30 AM	0	0	0	0	0	0	0	0	0	3	16	0	17	15	0	0	51
8:45 AM	0	0	0	0	0	0	0	0	0	9	20	0	29	14	0	0	72
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	38	98	0	120	97	0	0	353
APPROACH %'s :									0.00%	27.94%	72.06%	0.00%	55.30%	44.70%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	20	39	0	50	41	0	0	150
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.833	0.696	0.000	0.694	0.683	0.000	0.000	0.852
										0.738				0.948			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0	0	0	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	2	8	0	5	8	0	0	23
4:15 PM	0	0	0	0	0	0	0	0	0	3	4	0	8	8	0	0	23
4:30 PM	0	0	0	0	0	0	0	0	0	2	3	0	3	6	0	0	14
4:45 PM	0	0	0	0	0	0	0	0	0	3	5	0	2	6	0	0	16
5:00 PM	0	0	0	0	0	0	0	0	0	1	4	0	2	9	0	0	16
5:15 PM	0	0	0	0	0	0	0	0	0	2	5	0	3	4	0	0	14
5:30 PM	0	0	0	0	0	0	0	0	0	4	4	0	2	5	0	0	15
5:45 PM	0	0	0	0	0	0	0	0	0	3	6	0	1	6	0	0	16
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	20	39	0	26	52	0	0	137
APPROACH %'s :									0.00%	33.90%	66.10%	0.00%	33.33%	66.67%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	10	18	0	9	24	0	0	61
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.900	0.000	0.750	0.667	0.000	0.000	0.953
										0.875				0.750			

Prepared by National Data & Surveying Services

I-605 SB On-ramp & Live Oak Ave

Peak Hour Turning Movement Count

ID: 19-05193-005
City: Irwindale

Day: Wednesday
Date: 04/10/2019

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

I-605 SB On-ramp — SOUTHBOUND

	Right	Through	Left	U-turn	Departing
AM	0	0	0	0	0
NOON	0	0	0	0	0
PM	0	0	0	0	0
(red)	0	0	0	0	

Live Oak Ave — EASTBOUND

	AM	NOON	PM	(red)
Departing	1288	0	914	
U-turn	0	0	0	0
Left	0	0	0	0
Through	268	0	994	2
Right	410	0	1197	1

Live Oak Ave — WESTBOUND

	(red)	PM	NOON	AM
Right	0	0	0	0
Through	2	914	0	1288
Left	1	516	0	495
U-turn	0	5	0	0
Departing		999	0	268

I-605 SB On-ramp — NORTHBOUND

	Departing	U-turn	Left	Through	Right
(red)		0	0	0	0
PM	1713	0	0	0	0
NOON	0	0	0	0	0
AM	905	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	2461	0	3626
PHF	0.95		0.95

Cars (AM)

Approach	Left/U-turn	Through	Right
Southbound	0	0	0
Eastbound	0	237	330
Westbound	409	1197	0
Northbound	0	0	0

Cars (AM)

Approach	Left/U-turn	Through	Right
Southbound	0	0	0
Eastbound	0	237	330
Westbound	409	1197	0
Northbound	0	0	0

Cars (NOON)

Approach	Left/U-turn	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Cars (NOON)

Approach	Left/U-turn	Through	Right
Southbound	N/A	N/A	N/A
Eastbound	N/A	N/A	N/A
Westbound	N/A	N/A	N/A
Northbound	N/A	N/A	N/A

Cars (PM)

Approach	Left/U-turn	Through	Right
Southbound	0	0	0
Eastbound	0	964	1145
Westbound	502	864	0
Northbound	0	0	0

Cars (PM)

Approach	Left/U-turn	Through	Right
Southbound	0	0	0
Eastbound	0	964	1145
Westbound	502	864	0
Northbound	0	0	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg (westward)	0	0	0
North leg (eastward)	0	0	0
West leg (southward)	0	0	0
West leg (northward)	0	0	0
East leg (southward)	0	0	0
East leg (northward)	0	0	0
South leg (eastward)	0	0	0
South leg (westward)	0	0	0
NW corner diagonal	0	0	0
NE corner diagonal	0	0	0
SW corner diagonal	0	0	0
SE corner diagonal	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Off-ramps & Live Oak Ave
City: Irwindale
Control: 2-Way Stop (NB/SB)

Project ID: 19-05193-006
Date: 4/10/2019

Total

NS/EW Streets:	I-605 NB Off-ramps				I-605 NB Off-ramps				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	85	0	0	0	95	0	0	40	0	0	0	370	0	0	590
7:15 AM	0	0	102	0	0	0	124	0	0	60	0	0	0	335	0	0	621
7:30 AM	0	0	118	0	0	0	140	0	0	68	0	0	0	289	0	0	615
7:45 AM	0	0	152	0	0	0	139	0	0	96	0	0	0	293	0	0	680
8:00 AM	0	0	129	0	0	0	121	0	0	99	0	0	0	265	0	0	614
8:15 AM	0	0	119	0	0	0	141	0	0	113	0	0	0	215	0	0	588
8:30 AM	0	0	132	0	0	0	141	0	0	95	0	0	0	246	0	0	614
8:45 AM	0	0	117	0	0	0	140	0	0	105	0	0	0	206	0	0	568
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	954	0	0	0	1041	0	0	676	0	0	0	2219	0	0	4890
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	501	0	0	0	524	0	0	323	0	0	0	1182	0	0	2530
PEAK HR FACTOR :	0.000	0.000	0.824	0.000	0.000	0.000	0.936	0.000	0.000	0.816	0.000	0.000	0.000	0.882	0.000	0.000	0.930
	0.824				0.936				0.816				0.882				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	149	0	0	0	142	0	0	205	0	0	0	182	0	0	678
4:15 PM	0	0	156	0	0	0	146	0	0	222	0	0	0	182	0	0	706
4:30 PM	0	0	172	0	0	0	130	0	0	250	0	0	0	210	0	0	762
4:45 PM	0	0	158	0	0	0	138	0	0	247	0	0	0	188	0	0	731
5:00 PM	0	0	146	0	0	0	134	0	0	226	0	0	0	261	0	0	767
5:15 PM	0	0	146	0	0	0	127	0	0	272	0	0	0	243	0	0	788
5:30 PM	0	0	113	0	0	0	147	0	0	242	0	0	0	197	0	0	699
5:45 PM	0	0	131	0	0	0	120	0	0	265	0	0	0	173	0	0	689
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1171	0	0	0	1084	0	0	1929	0	0	0	1636	0	0	5820
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	622	0	0	0	529	0	0	995	0	0	0	902	0	0	3048
PEAK HR FACTOR :	0.000	0.000	0.904	0.000	0.000	0.000	0.958	0.000	0.000	0.915	0.000	0.000	0.000	0.864	0.000	0.000	0.967
	0.904				0.958				0.915				0.864				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Off-ramps & Live Oak Ave
City: Irwindale
Control: 2-Way Stop (NB/SB)

Project ID: 19-05193-006
Date: 4/10/2019

Cars

NS/EW Streets:	I-605 NB Off-ramps				I-605 NB Off-ramps				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	67	0	0	0	84	0	0	33	0	0	0	334	0	0	518
7:15 AM	0	0	80	0	0	0	110	0	0	51	0	0	0	298	0	0	539
7:30 AM	0	0	97	0	0	0	122	0	0	59	0	0	0	263	0	0	541
7:45 AM	0	0	135	0	0	0	130	0	0	90	0	0	0	265	0	0	620
8:00 AM	0	0	104	0	0	0	106	0	0	93	0	0	0	235	0	0	538
8:15 AM	0	0	89	0	0	0	122	0	0	102	0	0	0	187	0	0	500
8:30 AM	0	0	100	0	0	0	126	0	0	90	0	0	0	206	0	0	522
8:45 AM	0	0	83	0	0	0	123	0	0	90	0	0	0	165	0	0	461
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	755	0	0	0	923	0	0	608	0	0	0	1953	0	0	4239
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	416	0	0	0	468	0	0	293	0	0	0	1061	0	0	2238
PEAK HR FACTOR :	0.00	0.000	0.770	0.000	0.000	0.000	0.900	0.000	0.000	0.788	0.000	0.000	0.000	0.890	0.000	0.000	0.902
		0.770				0.900				0.788				0.890			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	138	0	0	0	126	0	0	199	0	0	0	164	0	0	627
4:15 PM	0	0	146	0	0	0	136	0	0	211	0	0	0	160	0	0	653
4:30 PM	0	0	163	0	0	0	115	0	0	243	0	0	0	200	0	0	721
4:45 PM	0	0	153	0	0	0	134	0	0	236	0	0	0	178	0	0	701
5:00 PM	0	0	138	0	0	0	119	0	0	219	0	0	0	253	0	0	729
5:15 PM	0	0	141	0	0	0	121	0	0	267	0	0	0	235	0	0	764
5:30 PM	0	0	106	0	0	0	142	0	0	237	0	0	0	188	0	0	673
5:45 PM	0	0	127	0	0	0	110	0	0	258	0	0	0	166	0	0	661
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	1112	0	0	0	1003	0	0	1870	0	0	0	1544	0	0	5529
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	595	0	0	0	489	0	0	965	0	0	0	866	0	0	2915
PEAK HR FACTOR :	0.00	0.000	0.913	0.000	0.000	0.000	0.912	0.000	0.000	0.904	0.000	0.000	0.000	0.856	0.000	0.000	0.954
		0.913				0.912				0.904				0.856			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Off-ramps & Live Oak Ave
City: Irwindale
Control: 2-Way Stop (NB/SB)

Project ID: 19-05193-006
Date: 4/10/2019

2axle

NS/EW Streets:	I-605 NB Off-ramps				I-605 NB Off-ramps				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	3	0	0	0	3	0	0	2	0	0	0	13	0	0	21
7:15 AM	0	0	2	0	0	0	4	0	0	2	0	0	0	14	0	0	22
7:30 AM	0	0	5	0	0	0	5	0	0	3	0	0	0	7	0	0	20
7:45 AM	0	0	1	0	0	0	2	0	0	1	0	0	0	4	0	0	8
8:00 AM	0	0	1	0	0	0	5	0	0	0	0	0	0	11	0	0	17
8:15 AM	0	0	4	0	0	0	3	0	0	5	0	0	0	7	0	0	19
8:30 AM	0	0	1	0	0	0	2	0	0	1	0	0	0	13	0	0	17
8:45 AM	0	0	5	0	0	0	3	0	0	3	0	0	0	7	0	0	18
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	22	0	0	0	27	0	0	17	0	0	0	76	0	0	142
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	9	0	0	0	16	0	0	6	0	0	0	36	0	0	67
PEAK HR FACTOR :	0.000	0.000	0.450	0.000	0.000	0.000	0.800	0.000	0.000	0.500	0.000	0.000	0.000	0.643	0.000	0.000	0.761
	0.450				0.800				0.500				0.643				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	4	0	0	0	2	0	0	4	0	0	0	6	0	0	16
4:15 PM	0	0	3	0	0	0	1	0	0	6	0	0	0	8	0	0	18
4:30 PM	0	0	4	0	0	0	4	0	0	4	0	0	0	1	0	0	13
4:45 PM	0	0	1	0	0	0	0	0	0	5	0	0	0	4	0	0	10
5:00 PM	0	0	4	0	0	0	2	0	0	4	0	0	0	2	0	0	12
5:15 PM	0	0	3	0	0	0	0	0	0	2	0	0	0	2	0	0	7
5:30 PM	0	0	3	0	0	0	1	0	0	1	0	0	0	3	0	0	8
5:45 PM	0	0	2	0	0	0	2	0	0	0	0	0	0	3	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	24	0	0	0	12	0	0	26	0	0	0	29	0	0	91
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	12	0	0	0	6	0	0	15	0	0	0	9	0	0	42
PEAK HR FACTOR :	0.00	0.000	0.750	0.000	0.000	0.000	0.375	0.000	0.000	0.750	0.000	0.000	0.000	0.563	0.000	0.000	0.808
	0.750				0.375				0.750				0.563				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Off-ramps & Live Oak Ave
City: Irwindale
Control: 2-Way Stop (NB/SB)

Project ID: 19-05193-006
Date: 4/10/2019

3axle

NS/EW Streets:	I-605 NB Off-ramps				I-605 NB Off-ramps				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	1	0	0	0	5	0	0	1	0	0	0	3	0	0	10
7:15 AM	0	0	4	0	0	0	5	0	0	1	0	0	0	7	0	0	17
7:30 AM	0	0	2	0	0	0	5	0	0	0	0	0	0	5	0	0	12
7:45 AM	0	0	3	0	0	0	1	0	0	1	0	0	0	5	0	0	10
8:00 AM	0	0	6	0	0	0	3	0	0	4	0	0	0	3	0	0	16
8:15 AM	0	0	3	0	0	0	3	0	0	1	0	0	0	3	0	0	10
8:30 AM	0	0	3	0	0	0	3	0	0	1	0	0	0	7	0	0	14
8:45 AM	0	0	1	0	0	0	4	0	0	4	0	0	0	2	0	0	11
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	23	0	0	0	29	0	0	13	0	0	0	35	0	0	100
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	15	0	0	0	14	0	0	6	0	0	0	20	0	0	55
PEAK HR FACTOR :	0.000	0.000	0.625	0.000	0.000	0.000	0.700	0.000	0.000	0.375	0.000	0.000	0.000	0.714	0.000	0.000	0.809
	0.625				0.700				0.375				0.714				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	3	0	0	0	6	0	0	1	0	0	0	7	0	0	17
4:15 PM	0	0	3	0	0	0	5	0	0	1	0	0	0	2	0	0	11
4:30 PM	0	0	2	0	0	0	5	0	0	1	0	0	0	6	0	0	14
4:45 PM	0	0	3	0	0	0	1	0	0	3	0	0	0	1	0	0	8
5:00 PM	0	0	3	0	0	0	5	0	0	2	0	0	0	2	0	0	12
5:15 PM	0	0	1	0	0	0	3	0	0	1	0	0	0	3	0	0	8
5:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	3	0	0	5
5:45 PM	0	0	0	0	0	0	2	0	0	4	0	0	0	3	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	17	0	0	0	27	0	0	13	0	0	0	27	0	0	84
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	9	0	0	0	14	0	0	7	0	0	0	12	0	0	42
PEAK HR FACTOR :	0.00	0.000	0.750	0.000	0.000	0.000	0.700	0.000	0.000	0.583	0.000	0.000	0.000	0.500	0.000	0.000	0.750
	0.750				0.700				0.583				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Off-ramps & Live Oak Ave
City: Irwindale
Control: 2-Way Stop (NB/SB)

Project ID: 19-05193-006
Date: 4/10/2019

4axle

NS/EW Streets:	I-605 NB Off-ramps				I-605 NB Off-ramps				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	14	0	0	0	3	0	0	4	0	0	0	20	0	0	41
7:15 AM	0	0	16	0	0	0	5	0	0	6	0	0	0	16	0	0	43
7:30 AM	0	0	14	0	0	0	8	0	0	6	0	0	0	14	0	0	42
7:45 AM	0	0	13	0	0	0	6	0	0	4	0	0	0	19	0	0	42
8:00 AM	0	0	18	0	0	0	7	0	0	2	0	0	0	16	0	0	43
8:15 AM	0	0	23	0	0	0	13	0	0	5	0	0	0	18	0	0	59
8:30 AM	0	0	28	0	0	0	10	0	0	3	0	0	0	20	0	0	61
8:45 AM	0	0	28	0	0	0	10	0	0	8	0	0	0	32	0	0	78
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	154	0	0	0	62	0	0	38	0	0	0	155	0	0	409
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	0	61	0	0	0	26	0	0	18	0	0	0	65	0	0	170
PEAK HR FACTOR :	0.000	0.000	0.847	0.000	0.000	0.000	0.813	0.000	0.000	0.750	0.000	0.000	0.000	0.855	0.000	0.000	0.988
	0.847				0.813				0.750				0.855				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	1	0	0	0	1	0	0	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	4	0	0	0	8	0	0	1	0	0	0	5	0	0	18
4:15 PM	0	0	4	0	0	0	4	0	0	4	0	0	0	12	0	0	24
4:30 PM	0	0	3	0	0	0	6	0	0	2	0	0	0	3	0	0	14
4:45 PM	0	0	1	0	0	0	3	0	0	3	0	0	0	5	0	0	12
5:00 PM	0	0	1	0	0	0	8	0	0	1	0	0	0	4	0	0	14
5:15 PM	0	0	1	0	0	0	3	0	0	2	0	0	0	3	0	0	9
5:30 PM	0	0	2	0	0	0	4	0	0	4	0	0	0	3	0	0	13
5:45 PM	0	0	2	0	0	0	6	0	0	3	0	0	0	1	0	0	12
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	18	0	0	0	42	0	0	20	0	0	0	36	0	0	116
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	6	0	0	0	20	0	0	8	0	0	0	15	0	0	49
PEAK HR FACTOR :	0.00	0.000	0.500	0.000	0.000	0.000	0.625	0.000	0.000	0.667	0.000	0.000	0.000	0.750	0.000	0.000	0.875
	0.500				0.625				0.667				0.750				

Prepared by National Data & Surveying Services

I-605 NB Off-ramps & Live Oak Ave

Peak Hour Turning Movement Count

ID: 19-05193-006
City: Irwindale

Day: Wednesday
Date: 04/10/2019

	PEAK HOURS	COUNT PERIODS
AM	07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

I-605 NB Off-ramps — SOUTHBOUND

	Right	Through	Left	U-Turn	Departing
AM	524	0	0	0	0
NOON	0	0	0	0	0
PM	529	0	0	0	0
	1	0	0	0	

Live Oak Ave — EASTBOUND

	AM	NOON	PM	
Departing	1706	0	1431	
U-Turn	0	0	0	0
Left	0	0	0	0
Through	323	0	995	2
Right	0	0	0	0

Live Oak Ave — WESTBOUND

		PM	NOON	AM
Right	0	0	0	0
Through	2	902	0	1182
Left	0	0	0	0
U-Turn	0	0	0	0
Departing		1617	0	824

I-605 NB Off-ramps — NORTHBOUND

	Departing	U-Turn	Left	Through	Right
		0	0	0	1
PM	0	0	0	0	622
NOON	0	0	0	0	0
AM	0	0	0	0	501

CONTROL

2-Way Stop (NB/SB)

	AM	NOON	PM
TEV	2530	0	3048
PHF	0.93		0.97

Cars (AM)

Approach	U-Turn	Left	Through	Right
SB	0	0	0	468
EB		0	293	0
WB	0	0	1061	0
NB		0	0	416

Cars (NOON)

Approach	U-Turn	Left	Through	Right
SB	N/A		N/A	N/A
EB		N/A	N/A	N/A
WB		N/A	N/A	N/A
NB		N/A	N/A	N/A

Cars (PM)

Approach	U-Turn	Left	Through	Right
SB	0	0	0	489
EB		0	965	0
WB	0	0	866	0
NB		0	0	595

Cars (AM)

Cars (NOON)

Cars (PM)

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North	0	0	0
South	0	0	0
East	0	0	0
West	0	0	0
NW corner (diagonal)	0	0	0
NE corner (diagonal)	0	0	0
SW corner (diagonal)	0	0	0
SE corner (diagonal)	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: Graham Access Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-007
Date: 4/10/2019

Total

NS/EW Streets:	Graham Access Rd				Graham Access Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	8	0	11	0	0	0	0	0	0	117	10	0	4	364	0	1	515
7:15 AM	20	0	12	0	0	0	0	0	0	146	14	0	2	307	0	0	501
7:30 AM	4	0	3	0	0	0	0	0	0	175	12	0	2	295	0	0	491
7:45 AM	13	0	8	0	0	0	0	0	0	236	13	0	4	269	0	0	543
8:00 AM	7	0	3	0	0	0	0	0	0	214	12	0	3	266	0	0	505
8:15 AM	4	0	10	0	0	0	0	0	0	209	17	0	2	208	0	0	450
8:30 AM	5	0	6	0	0	0	0	0	0	215	19	0	1	242	0	1	489
8:45 AM	14	0	3	0	0	0	0	0	0	194	22	0	6	190	0	0	429
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	75	0	56	0	0	0	0	0	0	1506	119	0	24	2141	0	2	3923
APPROACH %'s :	57.25%	0.00%	42.75%	0.00%					0.00%	92.68%	7.32%	0.00%	1.11%	98.80%	0.00%	0.09%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	45	0	34	0	0	0	0	0	0	674	49	0	12	1235	0	1	2050
PEAK HR FACTOR :	0.563	0.000	0.708	0.000	0.000	0.000	0.000	0.000	0.000	0.714	0.875	0.000	0.750	0.848	0.000	0.250	0.944
	0.617								0.726				0.846				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	6	0	2	0	0	0	0	0	0	350	4	0	1	173	0	1	537
4:15 PM	4	0	4	0	0	0	0	0	0	370	8	0	0	181	0	3	570
4:30 PM	5	0	3	0	0	0	0	0	0	426	2	0	0	205	0	1	642
4:45 PM	3	0	4	0	0	0	0	0	0	396	3	0	1	185	0	0	592
5:00 PM	7	0	5	0	0	0	0	0	0	368	3	0	3	256	0	2	644
5:15 PM	2	0	1	0	0	0	0	0	0	417	2	0	0	239	0	1	662
5:30 PM	1	0	3	0	0	0	0	0	0	354	1	0	3	195	0	2	559
5:45 PM	5	0	4	0	0	0	0	0	0	390	4	0	2	164	0	1	570
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	33	0	26	0	0	0	0	0	0	3071	27	0	10	1598	0	11	4776
APPROACH %'s :	55.93%	0.00%	44.07%	0.00%					0.00%	99.13%	0.87%	0.00%	0.62%	98.70%	0.00%	0.68%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	17	0	13	0	0	0	0	0	0	1607	10	0	4	885	0	4	2540
PEAK HR FACTOR :	0.607	0.000	0.650	0.000	0.000	0.000	0.000	0.000	0.000	0.943	0.833	0.000	0.333	0.864	0.000	0.500	0.959
	0.625								0.945				0.855				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Graham Access Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-007
Date: 4/10/2019

Cars

NS/EW Streets:	Graham Access Rd				Graham Access Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	3	0	2	0	0	0	0	0	0	99	2	0	3	331	0	1	441
7:15 AM	6	0	2	0	0	0	0	0	0	126	4	0	1	286	0	0	425
7:30 AM	1	0	1	0	0	0	0	0	0	155	2	0	1	268	0	0	428
7:45 AM	3	0	3	0	0	0	0	0	0	221	3	0	4	253	0	0	487
8:00 AM	1	0	1	0	0	0	0	0	0	197	0	0	1	243	0	0	443
8:15 AM	0	0	1	0	0	0	0	0	0	185	0	0	1	185	0	0	372
8:30 AM	0	0	2	0	0	0	0	0	0	195	2	0	0	208	0	1	408
8:45 AM	0	0	1	0	0	0	0	0	0	164	3	0	5	162	0	0	335
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	0	13	0	0	0	0	0	0	1342	16	0	16	1936	0	2	3339
APPROACH %'s :	51.85%	0.00%	48.15%	0.00%					0.00%	98.82%	1.18%	0.00%	0.82%	99.08%	0.00%	0.10%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	13	0	8	0	0	0	0	0	0	601	11	0	9	1138	0	1	1781
PEAK HR FACTOR :	0.54	0.000	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.680	0.688	0.000	0.563	0.860	0.000	0.250	0.914
		0.656								0.683				0.857			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	4	0	1	0	0	0	0	0	0	335	2	0	1	157	0	1	501
4:15 PM	1	0	3	0	0	0	0	0	0	353	4	0	0	162	0	3	526
4:30 PM	5	0	3	0	0	0	0	0	0	413	0	0	0	195	0	1	617
4:45 PM	2	0	3	0	0	0	0	0	0	382	0	0	1	176	0	0	564
5:00 PM	5	0	5	0	0	0	0	0	0	355	1	0	2	250	0	2	620
5:15 PM	1	0	1	0	0	0	0	0	0	409	0	0	0	232	0	1	644
5:30 PM	1	0	3	0	0	0	0	0	0	344	0	0	3	187	0	2	540
5:45 PM	4	0	3	0	0	0	0	0	0	379	3	0	1	157	0	1	548
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	23	0	22	0	0	0	0	0	0	2970	10	0	8	1516	0	11	4560
APPROACH %'s :	51.11%	0.00%	48.89%	0.00%					0.00%	99.66%	0.34%	0.00%	0.52%	98.76%	0.00%	0.72%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	13	0	12	0	0	0	0	0	0	1559	1	0	3	853	0	4	2445
PEAK HR FACTOR :	0.65	0.000	0.600	0.000	0.000	0.000	0.000	0.000	0.000	0.944	0.250	0.000	0.375	0.853	0.000	0.500	0.949
		0.625								0.944				0.846			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Graham Access Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-007
Date: 4/10/2019

2axle

NS/EW Streets:	Graham Access Rd				Graham Access Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	4	0	0	0	0	0	0	4	1	0	0	13	0	0	22
7:15 AM	8	0	5	0	0	0	0	0	0	4	0	0	0	6	0	0	23
7:30 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	7	0	0	15
7:45 AM	0	0	1	0	0	0	0	0	0	2	0	0	0	4	0	0	7
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	11	0	0	12
8:15 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	7	0	0	16
8:30 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	13	0	0	15
8:45 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	7	0	0	15
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	0	10	0	0	0	0	0	0	38	1	0	0	68	0	0	125
APPROACH %'s :	44.44%	0.00%	55.56%	0.00%					0.00%	97.44%	2.56%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	8	0	10	0	0	0	0	0	0	18	1	0	0	30	0	0	67
PEAK HR FACTOR :	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.563	0.250	0.000	0.000	0.577	0.000	0.000	0.728
	0.346								0.594				0.577				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	1	0	0	0	0	0	0	6	2	0	0	5	0	0	15
4:15 PM	0	0	0	0	0	0	0	0	0	7	2	0	0	8	0	0	17
4:30 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	1	0	0	9
4:45 PM	0	0	1	0	0	0	0	0	0	5	1	0	0	4	0	0	11
5:00 PM	2	0	0	0	0	0	0	0	0	6	2	0	1	0	0	0	11
5:15 PM	0	0	0	0	0	0	0	0	0	3	2	0	0	2	0	0	7
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	0	2	0	0	0	0	0	0	41	9	0	2	26	0	0	83
APPROACH %'s :	60.00%	0.00%	40.00%	0.00%					0.00%	82.00%	18.00%	0.00%	7.14%	92.86%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	2	0	1	0	0	0	0	0	0	22	5	0	1	7	0	0	38
PEAK HR FACTOR :	0.25	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.688	0.625	0.000	0.250	0.438	0.000	0.000	0.864
	0.375								0.844				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Graham Access Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-007
Date: 4/10/2019

3axle

NS/EW Streets:	Graham Access Rd				Graham Access Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	1	0	0	0	0	0	0	3	0	0	1	4	0	0	10
7:15 AM	0	0	0	0	0	0	0	0	0	3	1	0	0	5	0	0	9
7:30 AM	0	0	1	0	0	0	0	0	0	2	1	0	0	7	0	0	11
7:45 AM	0	0	0	0	0	0	0	0	0	4	1	0	0	3	0	0	8
8:00 AM	1	0	0	0	0	0	0	0	0	7	1	0	2	3	0	0	14
8:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	1	2	0	0	7
8:30 AM	0	0	0	0	0	0	0	0	0	3	2	0	0	5	0	0	10
8:45 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	2	0	0	0	0	0	0	30	6	0	4	33	0	0	77
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%					0.00%	83.33%	16.67%	0.00%	10.81%	89.19%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	1	0	2	0	0	0	0	0	0	12	3	0	1	19	0	0	38
PEAK HR FACTOR :	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.750	0.000	0.250	0.679	0.000	0.000	0.864
	0.375								0.750				0.714				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	7	0	0	11
4:15 PM	0	0	1	0	0	0	0	0	0	4	0	0	0	2	0	0	7
4:30 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	6	0	0	8
4:45 PM	1	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0	8
5:00 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0	0	7
5:15 PM	1	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	0	4
5:45 PM	1	0	1	0	0	0	0	0	0	3	1	0	0	3	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	0	2	0	0	0	0	0	0	26	4	0	0	24	0	0	59
APPROACH %'s :	60.00%	0.00%	40.00%	0.00%					0.00%	86.67%	13.33%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	2	0	0	0	0	0	0	0	0	13	3	0	0	10	0	0	28
PEAK HR FACTOR :	0.50	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.650	0.375	0.000	0.000	0.417	0.000	0.000	0.875
	0.500								0.571				0.417				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Graham Access Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-007
Date: 4/10/2019

4axle

NS/EW Streets:	Graham Access Rd				Graham Access Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	4	0	4	0	0	0	0	0	0	11	7	0	0	16	0	0	42
7:15 AM	6	0	5	0	0	0	0	0	0	13	9	0	1	10	0	0	44
7:30 AM	3	0	1	0	0	0	0	0	0	10	9	0	1	13	0	0	37
7:45 AM	10	0	4	0	0	0	0	0	0	9	9	0	0	9	0	0	41
8:00 AM	5	0	2	0	0	0	0	0	0	9	11	0	0	9	0	0	36
8:15 AM	4	0	9	0	0	0	0	0	0	11	17	0	0	14	0	0	55
8:30 AM	5	0	4	0	0	0	0	0	0	15	15	0	1	16	0	0	56
8:45 AM	14	0	2	0	0	0	0	0	0	18	19	0	1	17	0	0	71
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	51	0	31	0	0	0	0	0	0	96	96	0	4	104	0	0	382
APPROACH %'s :	62.20%	0.00%	37.80%	0.00%					0.00%	50.00%	50.00%	0.00%	3.70%	96.30%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	23	0	14	0	0	0	0	0	0	43	34	0	2	48	0	0	164
PEAK HR FACTOR :	0.575	0.000	0.700	0.000	0.000	0.000	0.000	0.000	0.000	0.827	0.944	0.000	0.500	0.750	0.000	0.000	0.932
		0.661								0.875				0.781			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	10
4:15 PM	3	0	0	0	0	0	0	0	0	6	2	0	0	9	0	0	20
4:30 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	3	0	0	8
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	0	9
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	6
5:30 PM	0	0	0	0	0	0	0	0	0	4	1	0	0	3	0	0	8
5:45 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	7
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	4	0	0	0	0	0	0	0	0	34	4	0	0	32	0	0	74
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%					0.00%	89.47%	10.53%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	13	1	0	0	15	0	0	29
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.250	0.000	0.000	0.750	0.000	0.000	0.806
										0.700				0.750			

Prepared by National Data & Surveying Services

Graham Access Rd & Live Oak Ave

Peak Hour Turning Movement Count

ID: 19-05193-007
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS	
AM	07:00 AM - 08:00 AM
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS	
AM	07:00 AM - 09:00 AM
NOON	NONE
PM	04:00 PM - 06:00 PM

Graham Access Rd — SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

Live Oak Ave — EASTBOUND

AM	NOON	PM		
1280	0	902	⇦	
0	0	0	↶	0
0	0	0	↱	0
674	0	1607	→	2
49	0	10	↴	0
AM	NOON	PM		

Live Oak Ave — WESTBOUND

PM	NOON	AM		
0	0	0	↳	0
885	0	1235	←	2
4	0	12	↰	1
4	0	1	↲	0
1624	0	709	⇨	
PM	NOON	AM		

0	0	0	0	
↲	↓	↳	↱	⇧

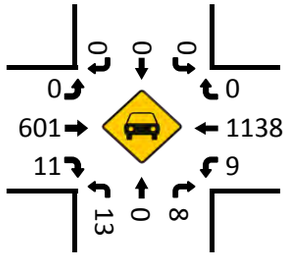
	⇩	↰	↑	↱
0	0	1	0	

CONTROL			
Signalized			
TEV	2050	0	2540
	AM	NOON	PM
PHF	0.94		0.96

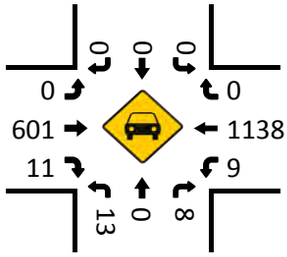
Graham Access Rd — NORTHBOUND

PM	14	0	17	0	13	PM
NOON	0	0	0	0	0	NOON
AM	61	0	45	0	34	AM

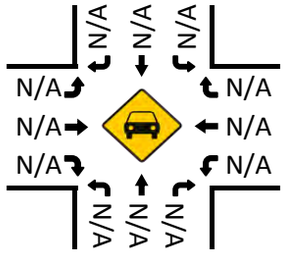
Cars (AM)



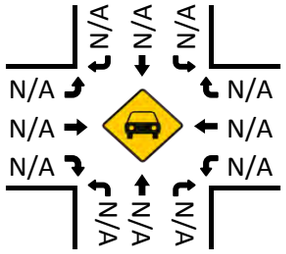
Cars (AM)



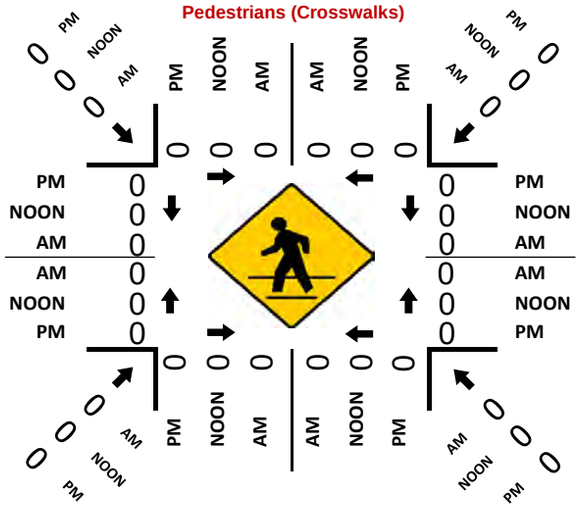
Cars (NOON)



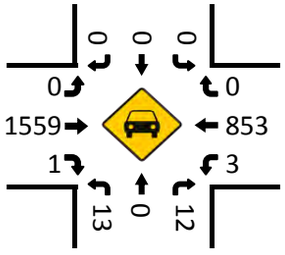
Cars (NOON)



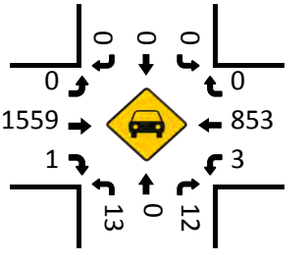
Pedestrians (Crosswalks)



Cars (PM)



Cars (PM)



Graham Access Rd — NORTHBOUND

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-008
Date: 4/10/2019

Total

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	9	14	12	0	3	35	9	0	23	96	8	0	78	323	0	0	610
7:15 AM	9	12	17	0	4	39	9	0	13	121	12	0	83	304	2	0	625
7:30 AM	16	15	37	0	6	91	6	0	16	132	13	0	81	243	2	0	658
7:45 AM	13	21	44	0	7	81	10	0	17	186	27	0	67	249	4	0	726
8:00 AM	12	26	52	0	2	69	6	0	9	178	26	0	65	257	4	0	706
8:15 AM	15	20	15	0	7	69	6	0	18	153	43	0	51	179	5	0	581
8:30 AM	6	15	23	0	4	58	11	0	19	160	41	0	43	222	3	0	605
8:45 AM	14	12	26	0	9	39	11	0	16	131	35	0	65	167	3	0	528
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	94	135	226	0	42	481	68	0	131	1157	205	0	533	1944	23	0	5039
APPROACH %'s :	20.66%	29.67%	49.67%	0.00%	7.11%	81.39%	11.51%	0.00%	8.77%	77.49%	13.73%	0.00%	21.32%	77.76%	0.92%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	50	74	150	0	19	280	31	0	55	617	78	0	296	1053	12	0	2715
PEAK HR FACTOR :	0.781	0.712	0.721	0.000	0.679	0.769	0.775	0.000	0.809	0.829	0.722	0.000	0.892	0.866	0.750	0.000	0.935
	0.761				0.801				0.815				0.875				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	17	25	127	0	4	8	8	0	8	340	5	0	21	153	2	0	718
4:15 PM	23	25	124	0	4	10	11	0	10	358	8	0	16	143	4	0	736
4:30 PM	31	34	144	0	5	6	17	0	10	377	4	0	35	155	5	0	823
4:45 PM	23	25	125	0	4	8	17	0	13	395	5	0	29	135	1	0	780
5:00 PM	59	53	145	0	9	9	19	0	10	337	10	0	19	174	8	0	852
5:15 PM	42	36	117	0	6	4	10	0	5	412	7	0	21	176	7	0	843
5:30 PM	34	33	135	0	5	8	19	0	8	296	6	0	25	145	6	0	720
5:45 PM	15	20	98	0	3	5	8	0	10	415	5	0	22	135	3	0	739
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	244	251	1015	0	40	58	109	0	74	2930	50	0	188	1216	36	0	6211
APPROACH %'s :	16.16%	16.62%	67.22%	0.00%	19.32%	28.02%	52.66%	0.00%	2.42%	95.94%	1.64%	0.00%	13.06%	84.44%	2.50%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	155	148	531	0	24	27	63	0	38	1521	26	0	104	640	21	0	3298
PEAK HR FACTOR :	0.657	0.698	0.916	0.000	0.667	0.750	0.829	0.000	0.731	0.923	0.650	0.000	0.743	0.909	0.656	0.000	0.968
	0.811				0.770				0.935				0.938				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-008
Date: 4/10/2019

Cars

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	9	7	11	0	3	33	6	0	11	87	6	0	74	302	0	0	549
7:15 AM	8	7	16	0	4	35	6	0	8	109	3	0	81	291	1	0	569
7:30 AM	15	6	34	0	6	87	3	0	11	126	10	0	77	229	1	0	605
7:45 AM	13	14	37	0	7	79	8	0	13	181	22	0	63	240	4	0	681
8:00 AM	7	10	43	0	2	67	2	0	5	169	23	0	65	240	2	0	635
8:15 AM	11	8	13	0	6	66	2	0	9	140	33	0	50	166	4	0	508
8:30 AM	4	13	21	0	4	54	3	0	12	155	32	0	41	201	3	0	543
8:45 AM	13	8	24	0	9	36	4	0	8	119	29	0	62	150	1	0	463
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	80	73	199	0	41	457	34	0	77	1086	158	0	513	1819	16	0	4553
APPROACH %'s :	22.73%	20.74%	56.53%	0.00%	7.71%	85.90%	6.39%	0.00%	5.83%	82.21%	11.96%	0.00%	21.85%	77.47%	0.68%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	43	37	130	0	19	268	19	0	37	585	58	0	286	1000	8	0	2490
PEAK HR FACTOR :	0.72	0.661	0.756	0.000	0.679	0.770	0.594	0.000	0.712	0.808	0.630	0.000	0.883	0.859	0.500	0.000	0.914
	0.820				0.797				0.787				0.867				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	15	21	121	0	4	7	6	0	7	329	5	0	20	141	2	0	678
4:15 PM	20	24	117	0	4	10	8	0	7	342	7	0	13	132	3	0	687
4:30 PM	29	33	138	0	5	6	14	0	9	366	4	0	34	148	2	0	788
4:45 PM	22	25	119	0	4	8	15	0	12	385	3	0	29	132	1	0	755
5:00 PM	58	51	141	0	9	8	17	0	10	327	10	0	18	172	8	0	829
5:15 PM	41	34	117	0	6	4	9	0	5	408	7	0	19	172	6	0	828
5:30 PM	33	30	133	0	5	6	18	0	7	287	6	0	24	139	5	0	693
5:45 PM	15	20	93	0	3	5	7	0	8	409	5	0	21	129	3	0	718
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	233	238	979	0	40	54	94	0	65	2853	47	0	178	1165	30	0	5976
APPROACH %'s :	16.07%	16.41%	67.52%	0.00%	21.28%	28.72%	50.00%	0.00%	2.19%	96.22%	1.59%	0.00%	12.96%	84.85%	2.18%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	150	143	515	0	24	26	55	0	36	1486	24	0	100	624	17	0	3200
PEAK HR FACTOR :	0.65	0.701	0.913	0.000	0.667	0.813	0.809	0.000	0.750	0.911	0.600	0.000	0.735	0.907	0.531	0.000	0.965
	0.808				0.772				0.920				0.936				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-008
Date: 4/10/2019

2axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	2	1	0	0	1	0	0	4	2	0	0	2	12	0	0	24
7:15 AM	0	1	1	0	0	1	0	0	3	7	0	0	1	6	0	0	20
7:30 AM	0	0	2	0	0	0	0	0	2	3	0	0	2	7	0	0	16
7:45 AM	0	1	1	0	0	1	0	0	0	3	0	0	0	3	0	0	9
8:00 AM	2	0	1	0	0	1	2	0	0	2	0	0	0	9	0	0	17
8:15 AM	0	1	1	0	1	0	1	0	1	5	0	0	0	6	0	0	16
8:30 AM	1	0	1	0	0	0	0	0	0	2	1	0	1	12	0	0	18
8:45 AM	0	1	1	0	0	0	1	0	1	6	0	0	2	6	0	0	18
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	6	9	0	1	4	4	0	11	30	1	0	8	61	0	0	138
APPROACH %'s :	16.67%	33.33%	50.00%	0.00%	11.11%	44.44%	44.44%	0.00%	26.19%	71.43%	2.38%	0.00%	11.59%	88.41%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	2	2	5	0	0	3	2	0	5	15	0	0	3	25	0	0	62
PEAK HR FACTOR :	0.250	0.500	0.625	0.000	0.000	0.750	0.250	0.000	0.417	0.536	0.000	0.000	0.375	0.694	0.000	0.000	0.775
	0.750				0.417				0.500				0.778				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	3	2	0	0	0	1	0	0	7	0	0	1	5	0	0	20
4:15 PM	0	1	5	0	0	0	2	0	1	6	0	0	2	5	0	0	22
4:30 PM	1	1	3	0	0	0	0	0	0	7	0	0	1	2	0	0	15
4:45 PM	0	0	3	0	0	0	0	0	0	5	2	0	0	3	0	0	13
5:00 PM	0	1	3	0	0	0	0	0	0	5	0	0	0	1	0	0	10
5:15 PM	0	0	0	0	0	0	1	0	0	2	0	0	1	1	0	0	5
5:30 PM	0	2	1	0	0	1	1	0	0	6	0	0	0	4	1	0	16
5:45 PM	0	0	4	0	0	0	0	0	0	2	0	0	0	3	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	8	21	0	0	1	5	0	1	40	2	0	5	24	1	0	110
APPROACH %'s :	6.45%	25.81%	67.74%	0.00%	0.00%	16.67%	83.33%	0.00%	2.33%	93.02%	4.65%	0.00%	16.67%	80.00%	3.33%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	2	9	0	0	0	1	0	0	19	2	0	2	7	0	0	43
PEAK HR FACTOR :	0.25	0.500	0.750	0.000	0.000	0.000	0.250	0.000	0.000	0.679	0.250	0.000	0.500	0.583	0.000	0.000	0.717
	0.600				0.250				0.750				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-008
Date: 4/10/2019

3axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	0	1	0	2	2	0	0	0	2	0	0	8
7:15 AM	1	0	0	0	0	1	2	0	0	2	0	0	0	3	1	0	10
7:30 AM	0	0	1	0	0	1	1	0	0	1	0	0	0	2	0	0	6
7:45 AM	0	0	3	0	0	1	0	0	0	0	0	0	0	3	0	0	7
8:00 AM	2	0	1	0	0	0	0	0	0	4	1	0	0	4	1	0	13
8:15 AM	0	0	0	0	0	0	1	0	2	4	0	0	0	2	1	0	10
8:30 AM	0	0	1	0	0	1	1	0	0	2	1	0	0	4	0	0	10
8:45 AM	0	0	0	0	0	1	0	0	0	1	1	0	0	3	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	1	6	0	0	5	6	0	4	16	3	0	0	23	3	0	70
APPROACH %'s :	30.00%	10.00%	60.00%	0.00%	0.00%	45.45%	54.55%	0.00%	17.39%	69.57%	13.04%	0.00%	0.00%	88.46%	11.54%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	3	0	5	0	0	3	3	0	0	7	1	0	0	12	2	0	36
PEAK HR FACTOR :	0.375	0.000	0.417	0.000	0.000	0.750	0.375	0.000	0.000	0.438	0.250	0.000	0.000	0.750	0.500	0.000	0.692
	0.667				0.500				0.400				0.700				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	3	0	0	0	0	0	0	2	0	0	0	5	0	0	10
4:15 PM	1	0	2	0	0	0	1	0	2	3	0	0	0	0	0	0	9
4:30 PM	1	0	1	0	0	0	1	0	1	1	0	0	0	4	0	0	9
4:45 PM	0	0	2	0	0	0	0	0	0	3	0	0	0	0	0	0	5
5:00 PM	0	0	1	0	0	0	0	0	0	4	0	0	1	0	0	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	4
5:30 PM	0	1	0	0	0	1	0	0	0	1	0	0	1	0	0	0	4
5:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	1	9	0	0	1	3	0	3	16	0	0	3	12	1	0	51
APPROACH %'s :	16.67%	8.33%	75.00%	0.00%	0.00%	25.00%	75.00%	0.00%	15.79%	84.21%	0.00%	0.00%	18.75%	75.00%	6.25%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	4	0	0	0	1	0	1	9	0	0	2	5	1	0	24
PEAK HR FACTOR :	0.25	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.250	0.563	0.000	0.000	0.500	0.313	0.250	0.000	0.667
	0.625				0.250				0.625				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Live Oak Ave
City: Irwindale
Control: Signalized

Project ID: 19-05193-008
Date: 4/10/2019

4axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Live Oak Ave				Live Oak Ave				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	4	0	0	0	1	2	0	6	5	2	0	2	7	0	0	29
7:15 AM	0	4	0	0	0	2	1	0	2	3	9	0	1	4	0	0	26
7:30 AM	1	9	0	0	0	3	2	0	3	2	3	0	2	5	1	0	31
7:45 AM	0	6	3	0	0	0	2	0	4	2	5	0	4	3	0	0	29
8:00 AM	1	16	7	0	0	1	2	0	4	3	2	0	0	4	1	0	41
8:15 AM	4	11	1	0	0	3	2	0	6	4	10	0	1	5	0	0	47
8:30 AM	1	2	0	0	0	3	7	0	7	1	7	0	1	5	0	0	34
8:45 AM	1	3	1	0	0	2	6	0	7	5	5	0	1	8	2	0	41
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	8	55	12	0	0	15	24	0	39	25	43	0	12	41	4	0	278
APPROACH %'s :	10.67%	73.33%	16.00%	0.00%	0.00%	38.46%	61.54%	0.00%	36.45%	23.36%	40.19%	0.00%	21.05%	71.93%	7.02%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	2	35	10	0	0	6	7	0	13	10	19	0	7	16	2	0	127
PEAK HR FACTOR :	0.500	0.547	0.357	0.000	0.000	0.500	0.875	0.000	0.813	0.833	0.528	0.000	0.438	0.800	0.500	0.000	0.774
	0.490				0.650				0.750				0.781				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	1	1	0	1	2	1	0	1	1.5	0.5	0	1	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	1	1	0	0	1	1	0	1	2	0	0	0	2	0	0	10
4:15 PM	2	0	0	0	0	0	0	0	0	7	1	0	1	6	1	0	18
4:30 PM	0	0	2	0	0	0	2	0	0	3	0	0	0	1	3	0	11
4:45 PM	1	0	1	0	0	0	2	0	1	2	0	0	0	0	0	0	7
5:00 PM	1	1	0	0	0	1	2	0	0	1	0	0	0	1	0	0	7
5:15 PM	1	2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	6
5:30 PM	1	0	1	0	0	0	0	0	1	2	0	0	0	2	0	0	7
5:45 PM	0	0	1	0	0	0	0	0	2	3	0	0	1	1	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	7	4	6	0	0	2	7	0	5	21	1	0	2	15	4	0	74
APPROACH %'s :	41.18%	23.53%	35.29%	0.00%	0.00%	22.22%	77.78%	0.00%	18.52%	77.78%	3.70%	0.00%	9.52%	71.43%	19.05%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	3	3	3	0	0	1	6	0	1	7	0	0	0	4	3	0	31
PEAK HR FACTOR :	0.75	0.375	0.375	0.000	0.000	0.250	0.750	0.000	0.250	0.583	0.000	0.000	0.000	0.500	0.250	0.000	0.705
	0.750				0.583				0.667				0.438				

Prepared by National Data & Surveying Services

Rivergrade Rd & Live Oak Ave

Peak Hour Turning Movement Count

ID: 19-05193-008
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Rivergrade Rd)

AM	31	280	19	0	141	AM
NOON	0	0	0	0	0	NOON
PM	63	27	24	0	207	PM
	1	2	1	0		

EASTBOUND (Live Oak Ave)

AM	NOON	PM	
1134	0	858	
0	0	0	0
55	0	38	1
617	0	1521	1.5
78	0	26	0.5
AM	NOON	PM	

WESTBOUND (Live Oak Ave)

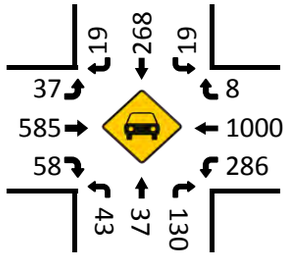
PM	NOON	AM	
21	0	12	1
640	0	1053	2
104	0	296	1
0	0	0	0
2076	0	786	
PM	NOON	AM	

NORTHBOUND (Rivergrade Rd)

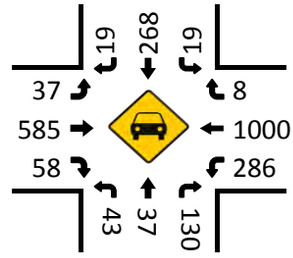
PM	157	0	155	148	531	PM
NOON	0	0	0	0	0	NOON
AM	654	0	50	74	150	AM
		0	1	1	1	

CONTROL			
Signalized			
TEV	2715	0	3298
	AM	NOON	PM
PHF	0.93		0.97

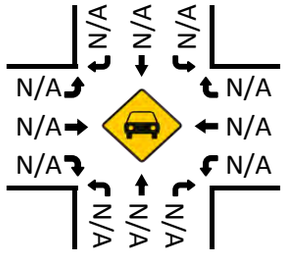
Cars (AM)



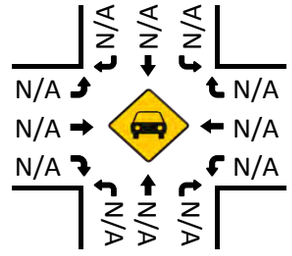
Cars (AM)



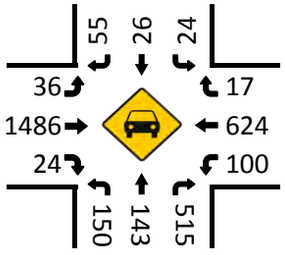
Cars (NOON)



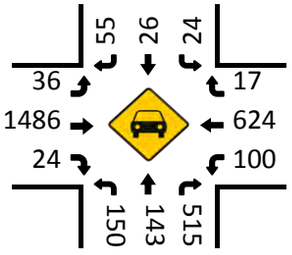
Cars (NOON)



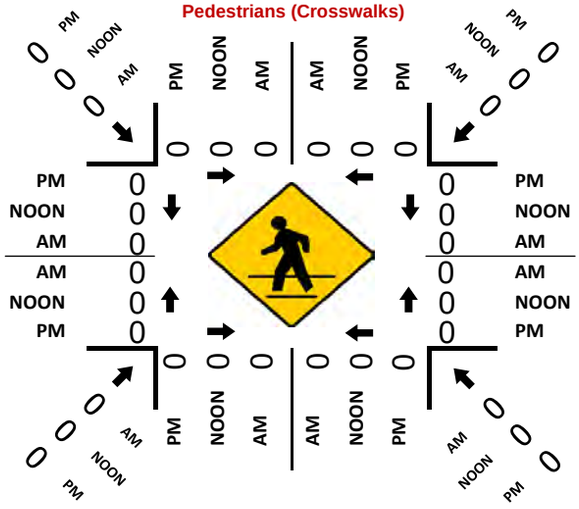
Cars (PM)



Cars (PM)



Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Commerce Dr
City: Irwindale
Control: 1-Way Stop (WB)

Project ID: 19-05193-009
Date: 4/10/2019

Total

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Commerce Dr				Commerce Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	48	21	0	3	108	0	0	0	0	0	0	23	0	3	0	206
7:15 AM	0	40	16	0	3	124	0	0	0	0	0	0	33	0	0	0	216
7:30 AM	0	64	20	0	6	152	0	0	0	0	0	0	32	0	1	0	275
7:45 AM	0	84	23	0	4	172	0	0	0	0	0	0	21	0	2	0	306
8:00 AM	0	93	31	0	5	153	0	0	0	0	0	0	15	0	2	0	299
8:15 AM	0	66	26	0	5	147	0	0	0	0	0	0	12	0	1	0	257
8:30 AM	0	64	14	0	1	111	0	0	0	0	0	0	7	0	3	0	200
8:45 AM	0	63	18	0	2	121	0	0	0	0	0	0	7	0	2	0	213
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	522	169	0	29	1088	0	0	0	0	0	0	150	0	14	0	1972
APPROACH %'s :	0.00%	75.54%	24.46%	0.00%	2.60%	97.40%	0.00%	0.00%					91.46%	0.00%	8.54%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	307	100	0	20	624	0	0	0	0	0	0	80	0	6	0	1137
PEAK HR FACTOR :	0.000	0.825	0.806	0.000	0.833	0.907	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.750	0.000	0.929
		0.821				0.915								0.652			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	150	5	0	0	41	0	0	0	0	0	0	11	0	9	0	216
4:15 PM	0	156	3	0	1	33	0	0	0	0	0	0	15	0	5	0	213
4:30 PM	0	175	10	0	2	62	0	0	0	0	0	0	22	0	14	0	285
4:45 PM	0	157	8	0	0	40	0	0	0	0	0	0	21	0	5	0	231
5:00 PM	0	178	5	0	3	44	0	0	0	0	0	0	56	0	20	0	306
5:15 PM	0	170	2	0	0	59	0	0	0	0	0	0	17	0	14	0	262
5:30 PM	0	166	6	0	0	46	0	0	0	0	0	0	19	0	10	0	247
5:45 PM	0	138	3	0	1	38	0	0	0	0	0	0	20	0	9	0	209
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1290	42	0	7	363	0	0	0	0	0	0	181	0	86	0	1969
APPROACH %'s :	0.00%	96.85%	3.15%	0.00%	1.89%	98.11%	0.00%	0.00%					67.79%	0.00%	32.21%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	680	25	0	5	205	0	0	0	0	0	0	116	0	53	0	1084
PEAK HR FACTOR :	0.000	0.955	0.625	0.000	0.417	0.827	0.000	0.000	0.000	0.000	0.000	0.000	0.518	0.000	0.663	0.000	0.886
		0.953				0.820								0.556			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Commerce Dr
City: Irwindale
Control: 1-Way Stop (WB)

Project ID: 19-05193-009
Date: 4/10/2019

Cars

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Commerce Dr				Commerce Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	28	20	0	3	93	0	0	0	0	0	0	23	0	2	0	169
7:15 AM	0	33	15	0	3	110	0	0	0	0	0	0	33	0	0	0	194
7:30 AM	0	47	19	0	6	141	0	0	0	0	0	0	30	0	1	0	244
7:45 AM	0	69	23	0	4	163	0	0	0	0	0	0	20	0	1	0	280
8:00 AM	0	65	30	0	5	142	0	0	0	0	0	0	13	0	1	0	256
8:15 AM	0	47	26	0	5	135	0	0	0	0	0	0	12	0	1	0	226
8:30 AM	0	57	13	0	1	94	0	0	0	0	0	0	6	0	2	0	173
8:45 AM	0	53	18	0	2	107	0	0	0	0	0	0	6	0	1	0	187
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	399	164	0	29	985	0	0	0	0	0	0	143	0	9	0	1729
APPROACH %'s :	0.00%	70.87%	29.13%	0.00%	2.86%	97.14%	0.00%	0.00%					94.08%	0.00%	5.92%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	228	98	0	20	581	0	0	0	0	0	0	75	0	4	0	1006
PEAK HR FACTOR :	0.00	0.826	0.817	0.000	0.833	0.891	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	1.000	0.000	0.898
		0.858				0.900								0.637			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	142	4	0	0	39	0	0	0	0	0	0	11	0	5	0	201
4:15 PM	0	147	3	0	0	30	0	0	0	0	0	0	13	0	4	0	197
4:30 PM	0	166	9	0	2	61	0	0	0	0	0	0	22	0	14	0	274
4:45 PM	0	148	7	0	0	39	0	0	0	0	0	0	20	0	5	0	219
5:00 PM	0	172	5	0	3	41	0	0	0	0	0	0	55	0	20	0	296
5:15 PM	0	169	2	0	0	57	0	0	0	0	0	0	15	0	14	0	257
5:30 PM	0	158	6	0	0	43	0	0	0	0	0	0	19	0	10	0	236
5:45 PM	0	134	2	0	1	37	0	0	0	0	0	0	20	0	9	0	203
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1236	38	0	6	347	0	0	0	0	0	0	175	0	81	0	1883
APPROACH %'s :	0.00%	97.02%	2.98%	0.00%	1.70%	98.30%	0.00%	0.00%					68.36%	0.00%	31.64%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	655	23	0	5	198	0	0	0	0	0	0	112	0	53	0	1046
PEAK HR FACTOR :	0.00	0.952	0.639	0.000	0.417	0.811	0.000	0.000	0.000	0.000	0.000	0.000	0.509	0.000	0.663	0.000	0.883
		0.958				0.806								0.550			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Commerce Dr
City: Irwindale
Control: 1-Way Stop (WB)

Project ID: 19-05193-009
Date: 4/10/2019

2axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Commerce Dr				Commerce Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	1	0	5
7:15 AM	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	6
7:30 AM	0	2	0	0	0	2	0	0	0	0	0	0	2	0	0	0	6
7:45 AM	0	3	0	0	0	1	0	0	0	0	0	0	1	0	0	0	5
8:00 AM	0	2	1	0	0	0	0	0	0	0	0	0	2	0	0	0	5
8:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	2	1	0	0	2	0	0	0	0	0	0	1	0	1	0	7
8:45 AM	0	1	0	0	0	2	0	0	0	0	0	0	1	0	1	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	15	3	0	0	13	0	0	0	0	0	0	7	0	3	0	41
APPROACH %'s :	0.00%	83.33%	16.67%	0.00%	0.00%	100.00%	0.00%	0.00%					70.00%	0.00%	30.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	8	1	0	0	4	0	0	0	0	0	0	5	0	0	0	18
PEAK HR FACTOR :	0.000	0.667	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.750
	0.750				0.500								0.625				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	1	0	0	1	0	0	0	0	0	0	0	0	3	0	8
4:15 PM	0	4	0	0	1	1	0	0	0	0	0	0	2	0	1	0	9
4:30 PM	0	6	1	0	0	1	0	0	0	0	0	0	0	0	0	0	8
4:45 PM	0	3	1	0	0	1	0	0	0	0	0	0	1	0	0	0	6
5:00 PM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	3
5:30 PM	0	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
5:45 PM	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	27	4	0	1	7	0	0	0	0	0	0	5	0	4	0	48
APPROACH %'s :	0.00%	87.10%	12.90%	0.00%	12.50%	87.50%	0.00%	0.00%					55.56%	0.00%	44.44%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	13	2	0	0	4	0	0	0	0	0	0	3	0	0	0	22
PEAK HR FACTOR :	0.00	0.542	0.500	0.000	0.000	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.688
	0.536				1.000								0.375				

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Commerce Dr
City: Irwindale
Control: 1-Way Stop (WB)

Project ID: 19-05193-009
Date: 4/10/2019

3axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Commerce Dr				Commerce Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4
8:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9	1	0	0	8	0	0	0	0	0	0	0	0	2	0	20
APPROACH %'s :	0.00%	90.00%	10.00%	0.00%	0.00%	100.00%	0.00%	0.00%					0.00%	0.00%	100.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	6	0	0	0	2	0	0	0	0	0	0	0	0	2	0	10
PEAK HR FACTOR :	0.000	0.750	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.625
		0.750				0.500								0.500			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	11	0	0	0	4	0	0	0	0	0	0	0	0	0	0	15
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
PEAK HR FACTOR :	0.00	0.417	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583
		0.417				0.500											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Commerce Dr
City: Irwindale
Control: 1-Way Stop (WB)

Project ID: 19-05193-009
Date: 4/10/2019

4axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Commerce Dr				Commerce Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	17	0	0	0	13	0	0	0	0	0	0	0	0	0	0	30
7:15 AM	0	5	0	0	0	10	0	0	0	0	0	0	0	0	0	0	15
7:30 AM	0	13	1	0	0	8	0	0	0	0	0	0	0	0	0	0	22
7:45 AM	0	10	0	0	0	7	0	0	0	0	0	0	0	0	0	0	17
8:00 AM	0	24	0	0	0	11	0	0	0	0	0	0	0	0	0	0	35
8:15 AM	0	18	0	0	0	11	0	0	0	0	0	0	0	0	0	0	29
8:30 AM	0	4	0	0	0	13	0	0	0	0	0	0	0	0	0	0	17
8:45 AM	0	8	0	0	0	9	0	0	0	0	0	0	0	0	0	0	17
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	99	1	0	0	82	0	0	0	0	0	0	0	0	0	0	182
APPROACH %'s :	0.00%	99.00%	1.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	65	1	0	0	37	0	0	0	0	0	0	0	0	0	0	103
PEAK HR FACTOR :	0.000	0.677	0.250	0.000	0.000	0.841	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.736
		0.688				0.841											

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4
4:15 PM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	16	0	0	0	5	0	0	0	0	0	0	1	0	1	0	23
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%					50.00%	0.00%	50.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	7	0	0	0	1	0	0	0	0	0	0	1	0	0	0	9
PEAK HR FACTOR :	0.00	0.583	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.750
		0.583				0.250								0.250			

Prepared by National Data & Surveying Services

Rivergrade Rd & Commerce Dr

Peak Hour Turning Movement Count

ID: 19-05193-009
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS	COUNT PERIODS
07:30 AM - 08:30 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (Rivergrade Rd)

AM	0	624	20	0	313	AM
NOON	0	0	0	0	0	NOON
PM	0	205	5	0	733	PM
	0	2	1	0		

EASTBOUND (Commerce Dr)

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

WESTBOUND (Commerce Dr)

	PM	NOON	AM
1	53	0	6
0	0	0	0
1	116	0	80
0	0	0	0
	30	0	120
	PM	NOON	AM

NORTHBOUND (Rivergrade Rd)

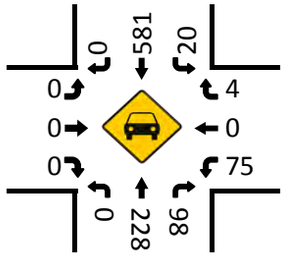
PM	321	0	0	680	25	PM
NOON	0	0	0	0	0	NOON
AM	704	0	0	307	100	AM
		0	0	2	0	

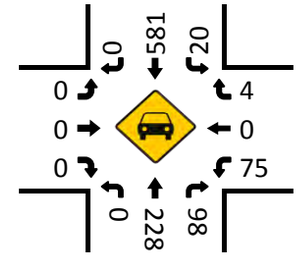
CONTROL

1-Way Stop (WB)

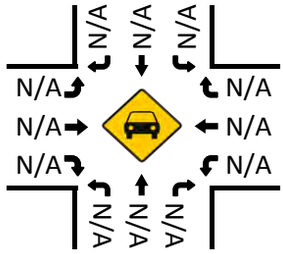
	AM	NOON	PM
TEV	1137	0	1084
PHF	0.93		0.89

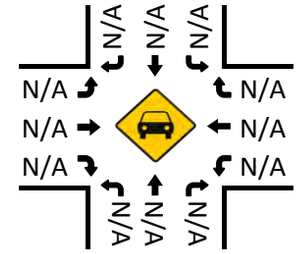
Cars (AM)



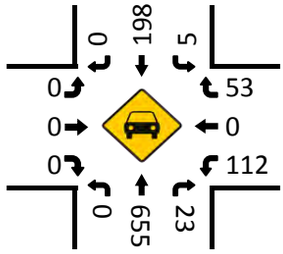


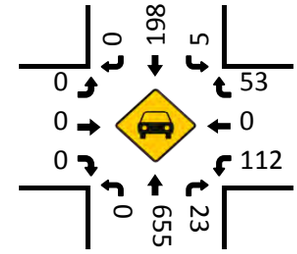
Cars (NOON)



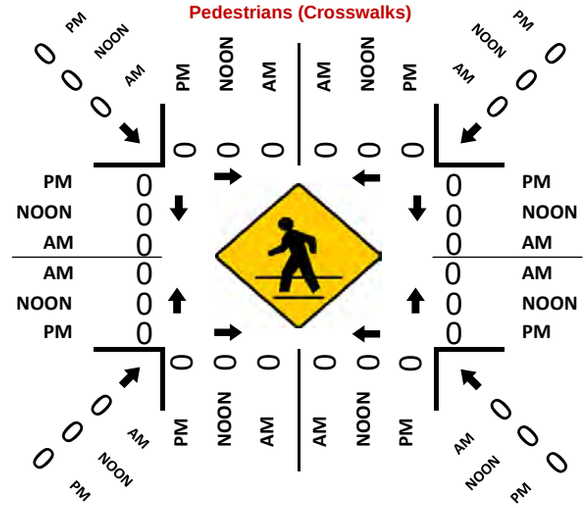


Cars (PM)





Pedestrians (Crosswalks)



National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Brooks Dr
City: Irwindale
Control: Signalized

Project ID: 19-05193-010
Date: 4/10/2019

Total

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Brooks Dr				Brooks Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	55	5	0	8	115	0	0	0	0	0	0	12	0	21	0	216
7:15 AM	0	60	7	0	6	121	0	0	0	0	0	0	17	0	25	0	236
7:30 AM	0	76	13	0	15	137	0	0	0	0	0	0	18	0	28	0	287
7:45 AM	0	130	16	0	27	116	0	0	0	0	0	0	17	0	33	0	339
8:00 AM	0	134	23	0	33	85	0	0	0	0	0	0	6	0	31	0	312
8:15 AM	0	102	21	0	25	70	0	0	0	0	0	0	3	0	20	0	241
8:30 AM	0	86	17	0	26	59	0	0	0	0	0	0	5	0	14	0	207
8:45 AM	0	74	18	0	25	70	0	2	0	0	0	0	4	0	13	0	206
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	717	120	0	165	773	0	2	0	0	0	0	82	0	185	0	2044
APPROACH %'s :	0.00%	85.66%	14.34%	0.00%	17.55%	82.23%	0.00%	0.21%					30.71%	0.00%	69.29%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	442	73	0	100	408	0	0	0	0	0	0	44	0	112	0	1179
PEAK HR FACTOR :	0.000	0.825	0.793	0.000	0.758	0.745	0.000	0.000	0.000	0.000	0.000	0.000	0.611	0.000	0.848	0.000	0.869
		0.820				0.836								0.780			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	113	3	0	12	54	0	0	0	0	0	0	10	0	18	0	210
4:15 PM	0	126	1	0	13	55	0	0	0	0	0	0	15	0	16	0	226
4:30 PM	0	123	3	0	21	98	0	0	0	0	0	0	32	0	32	0	309
4:45 PM	0	114	2	0	8	75	0	0	0	0	0	0	6	0	15	0	220
5:00 PM	0	95	1	0	26	122	0	0	0	0	0	0	28	0	24	0	296
5:15 PM	0	91	6	0	20	81	0	0	0	0	0	0	8	0	21	0	227
5:30 PM	0	116	1	0	6	81	0	0	0	0	0	0	10	0	17	0	231
5:45 PM	0	99	1	0	8	57	0	0	0	0	0	0	9	0	13	0	187
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	877	18	0	114	623	0	0	0	0	0	0	118	0	156	0	1906
APPROACH %'s :	0.00%	97.99%	2.01%	0.00%	15.47%	84.53%	0.00%	0.00%					43.07%	0.00%	56.93%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	423	12	0	75	376	0	0	0	0	0	0	74	0	92	0	1052
PEAK HR FACTOR :	0.000	0.860	0.500	0.000	0.721	0.770	0.000	0.000	0.000	0.000	0.000	0.000	0.578	0.000	0.719	0.000	0.851
		0.863				0.762								0.648			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Brooks Dr
City: Irwindale
Control: Signalized

Project ID: 19-05193-010
Date: 4/10/2019

Cars

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Brooks Dr				Brooks Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	49	4	0	6	101	0	0	0	0	0	0	8	0	9	0	177
7:15 AM	0	53	7	0	6	109	0	0	0	0	0	0	17	0	21	0	213
7:30 AM	0	63	12	0	13	127	0	0	0	0	0	0	17	0	26	0	258
7:45 AM	0	115	16	0	27	107	0	0	0	0	0	0	15	0	32	0	312
8:00 AM	0	114	23	0	22	81	0	0	0	0	0	0	5	0	20	0	265
8:15 AM	0	87	20	0	24	56	0	0	0	0	0	0	0	0	19	0	206
8:30 AM	0	76	15	0	24	46	0	0	0	0	0	0	4	0	13	0	178
8:45 AM	0	66	16	0	20	58	0	0	0	0	0	0	3	0	11	0	174
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	623	113	0	142	685	0	0	0	0	0	0	69	0	151	0	1783
APPROACH %'s :	0.00%	84.65%	15.35%	0.00%	17.17%	82.83%	0.00%	0.00%					31.36%	0.00%	68.64%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	379	71	0	86	371	0	0	0	0	0	0	37	0	97	0	1041
PEAK HR FACTOR :	0.00	0.824	0.772	0.000	0.796	0.730	0.000	0.000	0.000	0.000	0.000	0.000	0.544	0.000	0.758	0.000	0.834
		0.821				0.816								0.713			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	107	3	0	11	53	0	0	0	0	0	0	10	0	15	0	199
4:15 PM	0	115	1	0	10	53	0	0	0	0	0	0	14	0	16	0	209
4:30 PM	0	115	3	0	20	97	0	0	0	0	0	0	31	0	29	0	295
4:45 PM	0	106	2	0	7	74	0	0	0	0	0	0	6	0	14	0	209
5:00 PM	0	90	1	0	24	120	0	0	0	0	0	0	28	0	23	0	286
5:15 PM	0	87	6	0	19	78	0	0	0	0	0	0	7	0	21	0	218
5:30 PM	0	111	1	0	6	79	0	0	0	0	0	0	10	0	17	0	224
5:45 PM	0	95	1	0	8	56	0	0	0	0	0	0	9	0	12	0	181
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	826	18	0	105	610	0	0	0	0	0	0	115	0	147	0	1821
APPROACH %'s :	0.00%	97.87%	2.13%	0.00%	14.69%	85.31%	0.00%	0.00%					43.89%	0.00%	56.11%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	398	12	0	70	369	0	0	0	0	0	0	72	0	87	0	1008
PEAK HR FACTOR :	0.00	0.865	0.500	0.000	0.729	0.769	0.000	0.000	0.000	0.000	0.000	0.000	0.581	0.000	0.750	0.000	0.854
		0.869				0.762								0.663			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Brooks Dr
City: Irwindale
Control: Signalized

Project ID: 19-05193-010
Date: 4/10/2019

2axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Brooks Dr				Brooks Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	1	0	0	2	0	0	0	0	0	0	0	0	1	0	5
7:15 AM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	2	0	6
7:30 AM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	1	0	5
7:45 AM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	1	0	6
8:00 AM	0	1	0	0	1	1	0	0	0	0	0	0	0	0	2	0	5
8:15 AM	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	4
8:30 AM	0	2	0	0	1	1	0	0	0	0	0	0	0	0	1	0	5
8:45 AM	0	1	1	0	0	3	0	0	0	0	0	0	0	0	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	10	2	0	3	17	0	0	0	0	0	0	1	0	8	0	41
APPROACH %'s :	0.00%	83.33%	16.67%	0.00%	15.00%	85.00%	0.00%	0.00%					11.11%	0.00%	88.89%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	5	0	0	2	8	0	0	0	0	0	0	1	0	4	0	20
PEAK HR FACTOR :	0.000	0.625	0.000	0.000	0.500	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.833
		0.625				0.833								0.625			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	0	0	1	0	0	0	0	0	0	0	0	0	2	0	6
4:15 PM	0	5	0	0	2	1	0	0	0	0	0	0	1	0	0	0	9
4:30 PM	0	4	0	0	1	0	0	0	0	0	0	0	0	0	2	0	7
4:45 PM	0	4	0	0	1	1	0	0	0	0	0	0	0	0	1	0	7
5:00 PM	0	2	0	0	1	0	0	0	0	0	0	0	0	0	1	0	4
5:15 PM	0	2	0	0	1	2	0	0	0	0	0	0	0	0	0	0	5
5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	25	0	0	7	4	0	0	0	0	0	0	1	0	7	0	44
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	63.64%	36.36%	0.00%	0.00%					12.50%	0.00%	87.50%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	12	0	0	4	3	0	0	0	0	0	0	0	0	4	0	23
PEAK HR FACTOR :	0.00	0.750	0.000	0.000	1.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.821
		0.750				0.583								0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Brooks Dr
City: Irwindale
Control: Signalized

Project ID: 19-05193-010
Date: 4/10/2019

3axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Brooks Dr				Brooks Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
8:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
8:45 AM	0	1	0	0	1	2	0	0	0	0	0	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	9	0	0	2	6	0	0	0	0	0	0	1	0	0	0	18
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	25.00%	75.00%	0.00%	0.00%					100.00%	0.00%	0.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	5	0	0	1	1	0	0	0	0	0	0	1	0	0	0	8
PEAK HR FACTOR :	0.000	0.417	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.667
		0.417				0.500								0.250			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
4:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	11	0	0	0	4	0	0	0	0	0	0	0	0	0	0	15
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%									
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7
PEAK HR FACTOR :	0.00	0.625	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875
		0.625				0.500											

National Data & Surveying Services

Intersection Turning Movement Count

Location: Rivergrade Rd & Brooks Dr
City: Irwindale
Control: Signalized

Project ID: 19-05193-010
Date: 4/10/2019

4axle

NS/EW Streets:	Rivergrade Rd				Rivergrade Rd				Brooks Dr				Brooks Dr				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	4	0	0	2	12	0	0	0	0	0	0	4	0	11	0	33
7:15 AM	0	5	0	0	0	8	0	0	0	0	0	0	0	0	2	0	15
7:30 AM	0	10	1	0	0	8	0	0	0	0	0	0	1	0	1	0	21
7:45 AM	0	13	0	0	0	5	0	0	0	0	0	0	1	0	0	0	19
8:00 AM	0	16	0	0	10	3	0	0	0	0	0	0	1	0	9	0	39
8:15 AM	0	14	1	0	1	12	0	0	0	0	0	0	2	0	1	0	31
8:30 AM	0	7	2	0	1	10	0	0	0	0	0	0	1	0	0	0	21
8:45 AM	0	6	1	0	4	7	0	2	0	0	0	0	1	0	2	0	23
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	75	5	0	18	65	0	2	0	0	0	0	11	0	26	0	202
APPROACH %'s :	0.00%	93.75%	6.25%	0.00%	21.18%	76.47%	0.00%	2.35%					29.73%	0.00%	70.27%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	53	2	0	11	28	0	0	0	0	0	0	5	0	11	0	110
PEAK HR FACTOR :	0.000	0.828	0.500	0.000	0.275	0.583	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.306	0.000	0.705
		0.859				0.750								0.400			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	2	0	0	1	2	0	0	0	0	0	0	1	0	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	3
4:15 PM	0	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	0	2	0	0	0	1	0	0	0	0	0	0	1	0	1	0	5
4:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4
5:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:45 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	15	0	0	2	5	0	0	0	0	0	0	2	0	2	0	26
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	28.57%	71.43%	0.00%	0.00%					50.00%	0.00%	50.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	8	0	0	1	2	0	0	0	0	0	0	2	0	1	0	14
PEAK HR FACTOR :	0.00	1.000	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.250	0.000	0.700
		1.000				0.375								0.375			

Prepared by National Data & Surveying Services

Rivergrade Rd & Brooks Dr

Peak Hour Turning Movement Count

ID: 19-05193-010
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS		COUNT PERIODS
07:30 AM - 08:30 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:30 PM - 05:30 PM	PM	04:00 PM - 06:00 PM

Rivergrade Rd — SOUTHBOUND

AM	0	408	100	0	554	AM
NOON	0	0	0	0	0	NOON
PM	0	376	75	0	515	PM
	0	2	1	0		

Brooks Dr — EASTBOUND

AM	NOON	PM	
0	0	0	
0	0	0	0
0	0	0	0
0	0	0	0
0	0	0	0
AM	NOON	PM	

Brooks Dr — WESTBOUND

	PM	NOON	AM
1	92	0	112
0	0	0	0
1	74	0	44
0	0	0	0
	87	0	173
	PM	NOON	AM

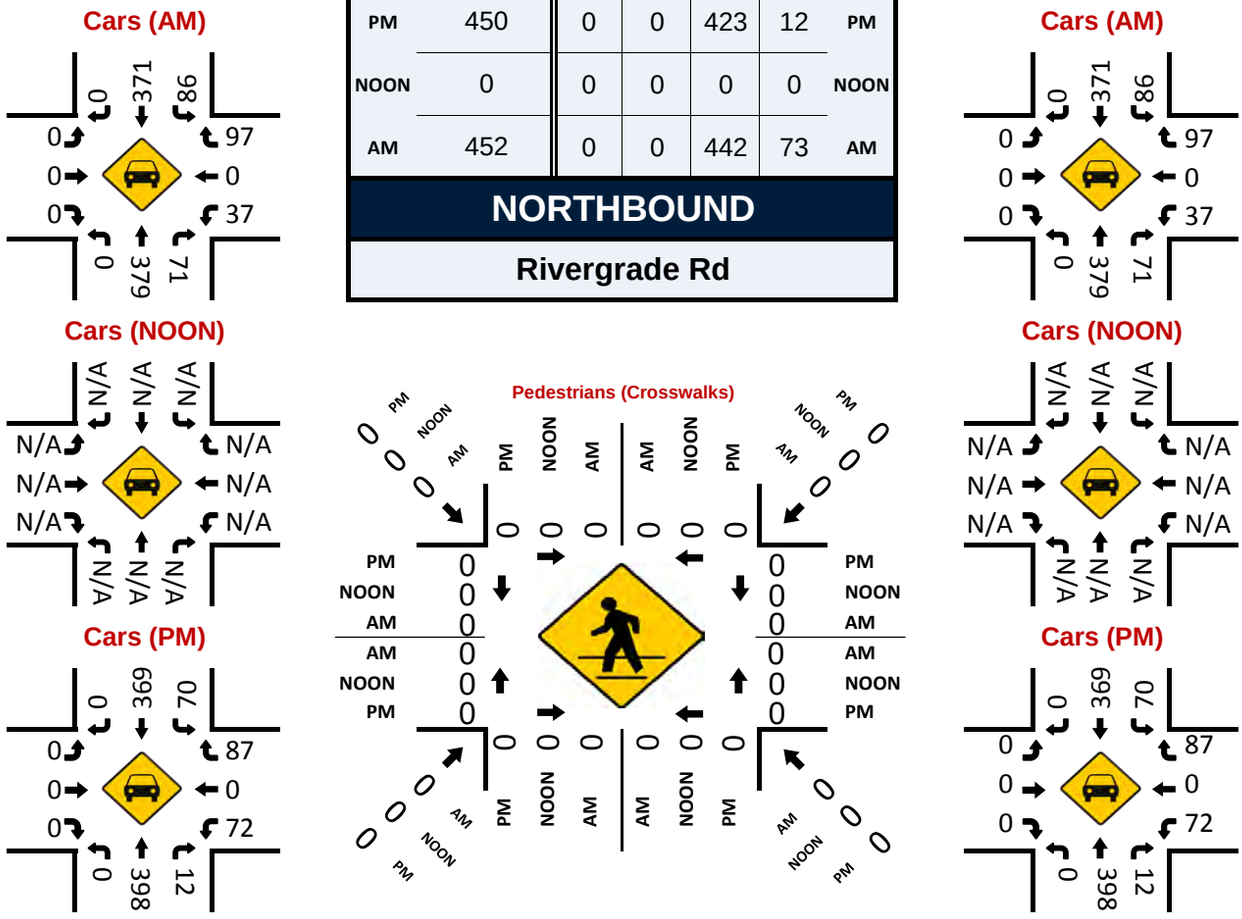
CONTROL

Signalized

	AM	NOON	PM
TEV	1179	0	1052
PHF	0.87		0.85

Rivergrade Rd — NORTHBOUND

		0	0	2	0	
PM	450	0	0	423	12	PM
NOON	0	0	0	0	0	NOON
AM	452	0	0	442	73	AM



National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-011
Date: 4/10/2019

Total

NS/EW Streets:	I-605 SB Ramps				I-605 SB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	14	50	124	0	0	79	93	0	106	241	0	0	707
7:15 AM	0	0	0	0	24	66	127	0	0	100	96	0	95	221	0	0	729
7:30 AM	0	0	0	0	20	66	130	0	0	135	85	0	74	213	0	0	723
7:45 AM	0	0	0	0	19	72	118	0	0	162	71	0	73	209	0	0	724
8:00 AM	0	0	0	0	17	37	117	0	0	167	89	0	85	193	0	0	705
8:15 AM	0	0	0	0	19	38	80	0	0	128	91	0	87	179	0	0	622
8:30 AM	0	0	0	0	25	49	57	0	0	127	94	0	78	184	0	0	614
8:45 AM	0	0	0	0	19	34	87	0	0	127	72	0	85	208	0	0	632
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	157	412	840	0	0	1025	691	0	683	1648	0	0	5456
APPROACH %'s :					11.14%	29.24%	59.62%	0.00%	0.00%	59.73%	40.27%	0.00%	29.30%	70.70%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	77	254	499	0	0	476	345	0	348	884	0	0	2883
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.802	0.882	0.960	0.000	0.000	0.735	0.898	0.000	0.821	0.917	0.000	0.000	0.989
						0.956				0.881				0.888			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	40	53	53	0	0	259	104	0	61	163	0	0	733
4:15 PM	0	0	0	0	32	53	63	0	0	253	117	0	74	150	0	0	742
4:30 PM	0	0	0	0	29	87	71	0	0	274	119	0	86	163	0	0	829
4:45 PM	0	0	0	0	38	62	62	0	0	298	94	0	67	144	0	0	765
5:00 PM	0	0	0	0	20	95	58	0	0	274	126	0	62	170	0	0	805
5:15 PM	0	0	0	0	33	93	68	0	0	302	96	0	65	180	0	0	837
5:30 PM	0	0	0	0	37	65	80	0	0	299	140	0	57	164	0	0	842
5:45 PM	0	0	0	0	46	43	63	0	0	252	92	0	57	181	0	0	734
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	275	551	518	0	0	2211	888	0	529	1315	0	0	6287
APPROACH %'s :					20.46%	41.00%	38.54%	0.00%	0.00%	71.35%	28.65%	0.00%	28.69%	71.31%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	128	315	268	0	0	1173	456	0	251	658	0	0	3249
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.842	0.829	0.838	0.000	0.000	0.971	0.814	0.000	0.937	0.914	0.000	0.000	0.965
						0.916				0.928				0.928			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-011
Date: 4/10/2019

Cars

NS/EW Streets:	I-605 SB Ramps				I-605 SB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	14	46	120	0	0	73	93	0	95	236	0	0	677
7:15 AM	0	0	0	0	22	59	124	0	0	98	92	0	86	215	0	0	696
7:30 AM	0	0	0	0	17	54	129	0	0	132	84	0	61	208	0	0	685
7:45 AM	0	0	0	0	16	60	117	0	0	155	68	0	64	201	0	0	681
8:00 AM	0	0	0	0	17	33	96	0	0	157	84	0	74	190	0	0	651
8:15 AM	0	0	0	0	16	27	78	0	0	119	77	0	80	169	0	0	566
8:30 AM	0	0	0	0	24	33	51	0	0	112	76	0	60	179	0	0	535
8:45 AM	0	0	0	0	18	26	84	0	0	118	63	0	66	198	0	0	573
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	144	338	799	0	0	964	637	0	586	1596	0	0	5064
APPROACH %'s :					11.24%	26.39%	62.37%	0.00%	0.00%	60.21%	39.79%	0.00%	26.86%	73.14%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	69	219	490	0	0	458	337	0	306	860	0	0	2739
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.784	0.913	0.950	0.000	0.000	0.739	0.906	0.000	0.805	0.911	0.000	0.000	0.984
					0.949				0.891				0.881				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	39	51	51	0	0	254	96	0	57	153	0	0	701
4:15 PM	0	0	0	0	32	51	57	0	0	252	113	0	74	143	0	0	722
4:30 PM	0	0	0	0	29	86	70	0	0	265	112	0	85	154	0	0	801
4:45 PM	0	0	0	0	35	60	58	0	0	293	89	0	67	134	0	0	736
5:00 PM	0	0	0	0	18	94	56	0	0	271	121	0	60	156	0	0	776
5:15 PM	0	0	0	0	33	92	66	0	0	300	89	0	64	167	0	0	811
5:30 PM	0	0	0	0	37	63	74	0	0	299	124	0	57	156	0	0	810
5:45 PM	0	0	0	0	43	42	61	0	0	250	87	0	56	169	0	0	708
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	266	539	493	0	0	2184	831	0	520	1232	0	0	6065
APPROACH %'s :					20.49%	41.53%	37.98%	0.00%	0.00%	72.44%	27.56%	0.00%	29.68%	70.32%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	123	309	254	0	0	1163	423	0	248	613	0	0	3133
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.831	0.822	0.858	0.000	0.000	0.969	0.853	0.000	0.925	0.918	0.000	0.000	0.966
					0.898				0.937				0.932				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-011
Date: 4/10/2019

2axle

NS/EW Streets:	I-605 SB Ramps				I-605 SB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	1	2	0	0	5	0	0	1	5	0	0	14
7:15 AM	0	0	0	0	1	2	2	0	0	2	2	0	1	4	0	0	14
7:30 AM	0	0	0	0	0	1	1	0	0	2	1	0	3	1	0	0	9
7:45 AM	0	0	0	0	2	3	1	0	0	5	1	0	3	8	0	0	23
8:00 AM	0	0	0	0	0	0	2	0	0	9	5	0	2	0	0	0	18
8:15 AM	0	0	0	0	1	1	0	0	0	9	13	0	0	4	0	0	28
8:30 AM	0	0	0	0	1	0	4	0	0	15	16	0	2	3	0	0	41
8:45 AM	0	0	0	0	0	3	2	0	0	8	9	0	0	6	0	0	28
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	5	11	14	0	0	55	47	0	12	31	0	0	175
APPROACH %'s :					16.67%	36.67%	46.67%	0.00%	0.00%	53.92%	46.08%	0.00%	27.91%	72.09%	0.00%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	3	7	6	0	0	14	4	0	8	18	0	0	60
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.375	0.583	0.750	0.000	0.000	0.700	0.500	0.000	0.667	0.563	0.000	0.000	0.652
						0.667				0.750				0.591			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	1	2	0	0	2	2	0	2	4	0	0	13
4:15 PM	0	0	0	0	0	1	5	0	0	1	1	0	0	2	0	0	10
4:30 PM	0	0	0	0	0	0	1	0	0	6	5	0	0	3	0	0	15
4:45 PM	0	0	0	0	1	1	3	0	0	4	3	0	0	9	0	0	21
5:00 PM	0	0	0	0	1	0	1	0	0	3	4	0	2	7	0	0	18
5:15 PM	0	0	0	0	0	0	1	0	0	1	4	0	0	6	0	0	12
5:30 PM	0	0	0	0	0	2	4	0	0	0	6	0	0	6	0	0	18
5:45 PM	0	0	0	0	0	0	1	0	0	2	2	0	0	9	0	0	14
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	2	5	18	0	0	19	27	0	4	46	0	0	121
APPROACH %'s :					8.00%	20.00%	72.00%	0.00%	0.00%	41.30%	58.70%	0.00%	8.00%	92.00%	0.00%	0.00%	
PEAK HR :	**04:45 PM - 05:45 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	2	3	9	0	0	8	17	0	2	28	0	0	69
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.500	0.375	0.563	0.000	0.000	0.500	0.708	0.000	0.250	0.778	0.000	0.000	0.821
						0.583				0.893				0.833			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-011
Date: 4/10/2019

3axle

NS/EW Streets:	I-605 SB Ramps				I-605 SB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
7:15 AM	0	0	0	0	1	1	0	0	0	0	1	0	1	1	0	0	5
7:30 AM	0	0	0	0	1	2	0	0	0	0	0	0	3	2	0	0	8
7:45 AM	0	0	0	0	1	2	0	0	0	1	0	0	0	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	3	2	0	0	0	1	0	3	1	0	0	10
8:45 AM	0	0	0	0	0	1	1	0	0	0	0	0	6	0	0	0	8
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	10	3	0	0	1	3	0	15	6	0	0	41
APPROACH %'s :					18.75%	62.50%	18.75%	0.00%	0.00%	25.00%	75.00%	0.00%	71.43%	28.57%	0.00%	0.00%	
PEAK HR :	**07:00 AM - 08:00 AM**																TOTAL
PEAK HR VOL :	0	0	0	0	3	6	0	0	0	1	1	0	5	3	0	0	19
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.750	0.750	0.000	0.000	0.000	0.250	0.250	0.000	0.417	0.375	0.000	0.000	0.594
					0.750				0.500				0.400				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	1	3	0	0	2	0	0	6
4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	6
4:30 PM	0	0	0	0	0	0	0	0	0	2	2	0	1	6	0	0	11
4:45 PM	0	0	0	0	2	0	0	0	0	1	1	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
5:15 PM	0	0	0	0	0	0	1	0	0	0	2	0	0	4	0	0	7
5:30 PM	0	0	0	0	0	0	1	0	0	0	5	0	0	0	0	0	6
5:45 PM	0	0	0	0	2	0	1	0	0	0	1	0	0	2	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	4	0	3	0	0	4	17	0	1	22	0	0	51
APPROACH %'s :					57.14%	0.00%	42.86%	0.00%	0.00%	19.05%	80.95%	0.00%	4.35%	95.65%	0.00%	0.00%	
PEAK HR :	**04:45 PM - 05:45 PM**																TOTAL
PEAK HR VOL :	0	0	0	0	2	0	2	0	0	1	8	0	0	9	0	0	22
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.250	0.400	0.000	0.000	0.450	0.000	0.000	0.786
					0.500				0.450				0.450				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 SB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-011
Date: 4/10/2019

4axle

NS/EW Streets:	I-605 SB Ramps				I-605 SB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	2	2	0	0	1	0	0	9	0	0	0	14
7:15 AM	0	0	0	0	0	4	1	0	0	0	1	0	7	1	0	0	14
7:30 AM	0	0	0	0	2	9	0	0	0	1	0	0	7	2	0	0	21
7:45 AM	0	0	0	0	0	7	0	0	0	1	2	0	6	0	0	0	16
8:00 AM	0	0	0	0	0	4	19	0	0	1	0	0	8	1	0	0	33
8:15 AM	0	0	0	0	2	10	2	0	0	0	0	0	7	6	0	0	27
8:30 AM	0	0	0	0	0	13	0	0	0	0	1	0	13	1	0	0	28
8:45 AM	0	0	0	0	1	4	0	0	0	1	0	0	13	4	0	0	23
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	5	53	24	0	0	5	4	0	70	15	0	0	176
APPROACH %'s :					6.10%	64.63%	29.27%	0.00%	0.00%	55.56%	44.44%	0.00%	82.35%	17.65%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	2	22	3	0	0	3	3	0	29	3	0	0	65
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.611	0.375	0.000	0.000	0.750	0.375	0.000	0.806	0.375	0.000	0.000	0.774
						0.614				0.500				0.889			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	0	0	0	0.5	1	1.5	0	0	2	1	0	1	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	1	0	0	0	2	3	0	2	4	0	0	13
4:15 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	2	0	0	4
4:30 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0	0	4
5:00 PM	0	0	0	0	1	1	1	0	0	0	1	0	0	2	0	0	6
5:15 PM	0	0	0	0	0	1	0	0	0	1	1	0	1	3	0	0	7
5:30 PM	0	0	0	0	0	0	1	0	0	0	5	0	0	2	0	0	8
5:45 PM	0	0	0	0	1	1	0	0	0	0	2	0	1	1	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	3	7	4	0	0	4	13	0	4	15	0	0	50
APPROACH %'s :					21.43%	50.00%	28.57%	0.00%	0.00%	23.53%	76.47%	0.00%	21.05%	78.95%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	3	3	0	0	1	8	0	1	8	0	0	25
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.750	0.750	0.000	0.000	0.250	0.400	0.000	0.250	0.667	0.000	0.000	0.781
						0.583				0.450				0.563			

Prepared by National Data & Surveying Services

I-605 SB Ramps & Los Angeles St

Peak Hour Turning Movement Count

ID: 19-05193-011
City: Irwindale

Day: Wednesday
Date: 04/10/2019

	PEAK HOURS	COUNT PERIODS
AM	07:00 AM - 08:00 AM	07:00 AM - 09:00 AM
NOON	NONE	NONE
PM	04:45 PM - 05:45 PM	04:00 PM - 06:00 PM

I-605 SB Ramps — SOUTHBOUND

	Right	Thru	Left	U-Turn	Departure
AM	499	254	77	0	0
NOON	0	0	0	0	0
PM	268	315	128	0	0
Lanes	1.5	1	0.5	0	

Los Angeles St — EASTBOUND

	AM	NOON	PM	Lanes
Departure	1383	0	926	
U-Turn	0	0	0	0
Left	0	0	0	0
Thru	476	0	1173	2
Right	345	0	456	1

Los Angeles St — WESTBOUND

	Lanes	PM	NOON	AM
Right	0	0	0	0
Thru	2	658	0	884
Left	1	251	0	348
U-Turn	0	0	0	0
Departure		1301	0	553

I-605 SB Ramps — NORTHBOUND

	Departure	U-Turn	Left	Thru	Right
Lanes		0	0	0	0
PM	1022	0	0	0	0
NOON	0	0	0	0	0
AM	947	0	0	0	0

CONTROL

Signalized

	AM	NOON	PM
TEV	2883	0	3249
PHF	0.99		0.96

Vehicle Classification

Movement	Cars (AM)	Cars (NOON)	Cars (PM)	2axle (AM)	2axle (NOON)	2axle (PM)
SB Right	490	N/A	254	9	N/A	6
SB Thru	219	N/A	309	7	N/A	3
SB Left	69	N/A	123	3	N/A	2
WB U-Turn	0	N/A	0	0	N/A	0
WB Thru	860	N/A	613	18	N/A	28
WB Left	306	N/A	248	8	N/A	2
EB U-Turn	0	N/A	0	0	N/A	0
EB Thru	458	N/A	1163	14	N/A	8
EB Right	337	N/A	423	4	N/A	17
NB Left	0	N/A	0	0	N/A	0
NB Thru	0	N/A	0	0	N/A	0
NB Right	0	N/A	0	0	N/A	0

Pedestrians (Crosswalks)

Crosswalk	AM	NOON	PM
North leg	0	0	0
South leg	0	0	0
West leg	0	0	0
East leg	0	0	0
Northwest corner	0	0	0
Northeast corner	0	0	0
Southwest corner	0	0	0
Southeast corner	0	0	0

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-012
Date: 4/10/2019

Total

NS/EW Streets:	I-605 NB Ramps				I-605 NB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	87	60	38	0	0	0	0	0	42	45	0	0	0	252	28	0	552
7:15 AM	107	82	50	0	0	0	0	0	56	75	0	0	0	217	48	0	635
7:30 AM	74	81	45	0	0	0	0	0	75	75	0	0	0	218	30	0	598
7:45 AM	88	104	62	0	0	0	0	0	76	97	0	0	0	191	36	0	654
8:00 AM	96	108	38	0	0	0	0	0	88	112	0	0	0	192	33	0	667
8:15 AM	59	103	47	0	0	0	0	0	54	81	0	0	0	201	26	0	571
8:30 AM	57	81	49	0	0	0	0	0	61	99	0	0	0	209	23	0	579
8:45 AM	115	72	44	0	0	0	0	0	58	82	0	0	0	172	26	0	569
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	683	691	373	0	0	0	0	0	510	666	0	0	0	1652	250	0	4825
APPROACH %'s :	39.10%	39.55%	21.35%	0.00%					43.37%	56.63%	0.00%	0.00%	0.00%	86.86%	13.14%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	365	375	195	0	0	0	0	0	295	359	0	0	0	818	147	0	2554
PEAK HR FACTOR :	0.853	0.868	0.786	0.000	0.000	0.000	0.000	0.000	0.838	0.801	0.000	0.000	0.000	0.938	0.766	0.000	0.957
	0.920								0.818				0.910				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	99	76	163	0	0	0	0	0	74	221	0	0	0	116	18	0	767
4:15 PM	121	77	177	0	0	0	0	0	69	226	0	0	0	111	29	0	810
4:30 PM	105	68	162	0	0	0	0	0	62	231	0	0	0	140	19	0	787
4:45 PM	108	68	178	0	0	0	0	0	60	266	0	0	0	114	13	0	807
5:00 PM	126	73	195	0	0	0	0	0	63	215	0	0	0	102	16	0	790
5:15 PM	115	67	184	0	0	0	0	0	75	277	0	0	0	121	15	0	854
5:30 PM	105	63	172	0	0	0	0	0	74	261	0	0	0	126	19	0	820
5:45 PM	123	44	174	0	0	0	0	0	73	239	0	0	0	108	11	0	772
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	902	536	1405	0	0	0	0	0	550	1936	0	0	0	938	140	0	6407
APPROACH %'s :	31.73%	18.85%	49.42%	0.00%					22.12%	77.88%	0.00%	0.00%	0.00%	87.01%	12.99%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	454	271	729	0	0	0	0	0	272	1019	0	0	0	463	63	0	3271
PEAK HR FACTOR :	0.901	0.928	0.935	0.000	0.000	0.000	0.000	0.000	0.907	0.920	0.000	0.000	0.000	0.919	0.829	0.000	0.958
	0.923								0.917				0.907				

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-012
Date: 4/10/2019

Cars

NS/EW Streets:	I-605 NB Ramps				I-605 NB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	83	56	36	0	0	0	0	0	39	42	0	0	0	240	25	0	521
7:15 AM	106	73	50	0	0	0	0	0	55	72	0	0	0	203	48	0	607
7:30 AM	68	70	45	0	0	0	0	0	73	71	0	0	0	207	28	0	562
7:45 AM	86	89	60	0	0	0	0	0	72	92	0	0	0	176	35	0	610
8:00 AM	91	100	32	0	0	0	0	0	83	107	0	0	0	182	32	0	627
8:15 AM	58	94	43	0	0	0	0	0	50	76	0	0	0	184	22	0	527
8:30 AM	53	72	45	0	0	0	0	0	48	92	0	0	0	191	21	0	522
8:45 AM	105	64	42	0	0	0	0	0	52	78	0	0	0	153	25	0	519
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	650	618	353	0	0	0	0	0	472	630	0	0	0	1536	236	0	4495
APPROACH %'s :	40.10%	38.12%	21.78%	0.00%					42.83%	57.17%	0.00%	0.00%	0.00%	86.68%	13.32%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	351	332	187	0	0	0	0	0	283	342	0	0	0	768	143	0	2406
PEAK HR FACTOR :	0.83	0.830	0.779	0.000	0.000	0.000	0.000	0.000	0.852	0.799	0.000	0.000	0.000	0.928	0.745	0.000	0.959
		0.926								0.822				0.907			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	92	65	160	0	0	0	0	0	71	218	0	0	0	111	16	0	733
4:15 PM	114	73	171	0	0	0	0	0	67	223	0	0	0	109	27	0	784
4:30 PM	98	60	159	0	0	0	0	0	57	229	0	0	0	136	18	0	757
4:45 PM	99	59	177	0	0	0	0	0	57	263	0	0	0	110	13	0	778
5:00 PM	117	71	191	0	0	0	0	0	63	214	0	0	0	101	16	0	773
5:15 PM	104	65	184	0	0	0	0	0	75	274	0	0	0	119	15	0	836
5:30 PM	98	57	170	0	0	0	0	0	72	259	0	0	0	121	19	0	796
5:45 PM	112	42	171	0	0	0	0	0	72	238	0	0	0	106	11	0	752
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	834	492	1383	0	0	0	0	0	534	1918	0	0	0	913	135	0	6209
APPROACH %'s :	30.79%	18.16%	51.05%	0.00%					21.78%	78.22%	0.00%	0.00%	0.00%	87.12%	12.88%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	418	252	722	0	0	0	0	0	267	1010	0	0	0	451	63	0	3183
PEAK HR FACTOR :	0.89	0.887	0.945	0.000	0.000	0.000	0.000	0.000	0.890	0.922	0.000	0.000	0.000	0.932	0.829	0.000	0.952
		0.918								0.915				0.918			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-012
Date: 4/10/2019

2axle

NS/EW Streets:	I-605 NB Ramps				I-605 NB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	0	1	0	0	0	0	0	2	3	0	0	0	4	0	0	11
7:15 AM	1	1	0	0	0	0	0	0	0	3	0	0	0	5	0	0	10
7:30 AM	1	0	0	0	0	0	0	0	0	2	0	0	0	4	0	0	7
7:45 AM	2	3	1	0	0	0	0	0	4	3	0	0	0	6	0	0	19
8:00 AM	3	3	2	0	0	0	0	0	4	5	0	0	0	1	0	0	18
8:15 AM	1	3	0	0	0	0	0	0	4	4	0	0	0	3	0	0	15
8:30 AM	1	0	1	0	0	0	0	0	13	5	0	0	0	4	1	0	25
8:45 AM	4	3	1	0	0	0	0	0	5	3	0	0	0	2	0	0	18
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	13	6	0	0	0	0	0	32	28	0	0	0	29	1	0	123
APPROACH %'s :	42.42%	39.39%	18.18%	0.00%					53.33%	46.67%	0.00%	0.00%	0.00%	96.67%	3.33%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	7	7	3	0	0	0	0	0	8	13	0	0	0	16	0	0	54
PEAK HR FACTOR :	0.583	0.583	0.375	0.000	0.000	0.000	0.000	0.000	0.500	0.650	0.000	0.000	0.000	0.667	0.000	0.000	0.711
		0.531								0.583				0.667			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	3	3	0	0	0	0	0	2	3	0	0	0	5	0	0	16
4:15 PM	1	1	4	0	0	0	0	0	1	2	0	0	0	2	1	0	12
4:30 PM	1	5	0	0	0	0	0	0	1	2	0	0	0	4	0	0	13
4:45 PM	5	3	0	0	0	0	0	0	1	3	0	0	0	3	0	0	15
5:00 PM	5	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	9
5:15 PM	6	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	11
5:30 PM	5	3	2	0	0	0	0	0	0	2	0	0	0	4	0	0	16
5:45 PM	6	0	2	0	0	0	0	0	1	0	0	0	0	1	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	29	17	14	0	0	0	0	0	6	14	0	0	0	21	1	0	102
APPROACH %'s :	48.33%	28.33%	23.33%	0.00%					30.00%	70.00%	0.00%	0.00%	0.00%	95.45%	4.55%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	21	8	5	0	0	0	0	0	1	7	0	0	0	9	0	0	51
PEAK HR FACTOR :	0.88	0.667	0.417	0.000	0.000	0.000	0.000	0.000	0.250	0.583	0.000	0.000	0.000	0.563	0.000	0.000	0.797
		0.850								0.500				0.563			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-012
Date: 4/10/2019

3axle

NS/EW Streets:	I-605 NB Ramps				I-605 NB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	1	1	0	0	0	0	0	0	1	0	0	0	0	0	2	0	5
7:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	4
7:30 AM	3	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	5
7:45 AM	0	1	1	0	0	0	0	0	0	1	0	0	0	0	0	0	3
8:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	0	2	1	0	5
8:15 AM	0	2	2	0	0	0	0	0	0	0	0	0	0	1	1	0	6
8:30 AM	3	1	2	0	0	0	0	0	0	1	0	0	0	0	0	0	7
8:45 AM	6	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	9
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	14	8	7	0	0	0	0	0	2	2	0	0	0	7	4	0	44
APPROACH %'s :	48.28%	27.59%	24.14%	0.00%					50.00%	50.00%	0.00%	0.00%	0.00%	63.64%	36.36%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	4	2	2	0	0	0	0	0	1	1	0	0	0	6	1	0	17
PEAK HR FACTOR :	0.333	0.500	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.500	0.250	0.000	0.850
		0.667								0.500				0.583			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5
4:30 PM	4	2	0	0	0	0	0	0	2	0	0	0	0	0	1	0	9
4:45 PM	2	2	1	0	0	0	0	0	2	0	0	0	0	1	0	0	8
5:00 PM	3	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	5
5:15 PM	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	3	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	22	4	1	0	0	0	0	0	4	3	0	0	0	2	1	0	37
APPROACH %'s :	81.48%	14.81%	3.70%	0.00%					57.14%	42.86%	0.00%	0.00%	0.00%	66.67%	33.33%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	9	2	1	0	0	0	0	0	2	1	0	0	0	2	0	0	17
PEAK HR FACTOR :	0.75	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.531
		0.600								0.375				0.500			

National Data & Surveying Services

Intersection Turning Movement Count

Location: I-605 NB Ramps & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-012
Date: 4/10/2019

4axle

NS/EW Streets:	I-605 NB Ramps				I-605 NB Ramps				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	2	3	1	0	0	0	0	0	0	0	0	0	0	8	1	0	15
7:15 AM	0	7	0	0	0	0	0	0	1	0	0	0	0	6	0	0	14
7:30 AM	2	11	0	0	0	0	0	0	1	2	0	0	0	6	2	0	24
7:45 AM	0	11	0	0	0	0	0	0	0	1	0	0	0	9	1	0	22
8:00 AM	1	5	3	0	0	0	0	0	1	0	0	0	0	7	0	0	17
8:15 AM	0	4	2	0	0	0	0	0	0	1	0	0	0	13	3	0	23
8:30 AM	0	8	1	0	0	0	0	0	0	1	0	0	0	14	1	0	25
8:45 AM	0	3	0	0	0	0	0	0	1	1	0	0	0	17	1	0	23
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	5	52	7	0	0	0	0	0	4	6	0	0	0	80	9	0	163
APPROACH %'s :	7.81%	81.25%	10.94%	0.00%					40.00%	60.00%	0.00%	0.00%	0.00%	89.89%	10.11%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	3	34	3	0	0	0	0	0	3	3	0	0	0	28	3	0	77
PEAK HR FACTOR :	0.375	0.773	0.250	0.000	0.000	0.000	0.000	0.000	0.750	0.375	0.000	0.000	0.000	0.778	0.375	0.000	0.802
		0.769								0.500				0.775			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0.5	1	0.5	0	0	0	0	0	1	2	0	0	0	2	1	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	5	8	0	0	0	0	0	0	1	0	0	0	0	0	2	0	16
4:15 PM	2	3	2	0	0	0	0	0	1	0	0	0	0	0	1	0	9
4:30 PM	2	1	3	0	0	0	0	0	2	0	0	0	0	0	0	0	8
4:45 PM	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
5:00 PM	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	2	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
5:30 PM	1	3	0	0	0	0	0	0	2	0	0	0	0	1	0	0	7
5:45 PM	2	2	1	0	0	0	0	0	0	0	0	0	0	1	0	0	6
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	17	23	7	0	0	0	0	0	6	1	0	0	0	2	3	0	59
APPROACH %'s :	36.17%	48.94%	14.89%	0.00%					85.71%	14.29%	0.00%	0.00%	0.00%	40.00%	60.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	6	9	1	0	0	0	0	0	2	1	0	0	0	1	0	0	20
PEAK HR FACTOR :	0.75	0.563	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.714
		0.667								0.375				0.250			

Prepared by National Data & Surveying Services

I-605 NB Ramps & Los Angeles St

Peak Hour Turning Movement Count

ID: 19-05193-012
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS		COUNT PERIODS
07:15 AM - 08:15 AM	AM	07:00 AM - 09:00 AM
NONE	NOON	NONE
04:45 PM - 05:45 PM	PM	04:00 PM - 06:00 PM

I-605 NB Ramps — SOUTHBOUND

AM	0	0	0	0	817	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	606	PM
	0	0	0	0		

Los Angeles St — EASTBOUND

AM	NOON	PM	
1183	0	917	
0	0	0	0
295	0	272	1
359	0	1019	2
0	0	0	0
AM	NOON	PM	

Los Angeles St — WESTBOUND

	PM	NOON	AM
1	63	0	147
2	463	0	818
0	0	0	0
0	0	0	0
	1748	0	554
	PM	NOON	AM

CONTROL

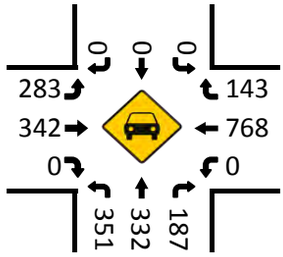
Signalized

	AM	NOON	PM
TEV	2554	0	3271
PHF	0.96		0.96

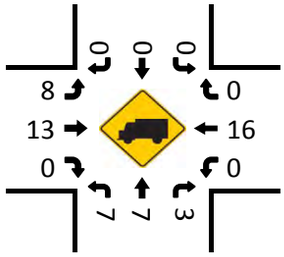
I-605 NB Ramps — NORTHBOUND

	0	0.5	1	0.5		
PM	0	0	454	271	729	PM
NOON	0	0	0	0	0	NOON
AM	0	0	365	375	195	AM

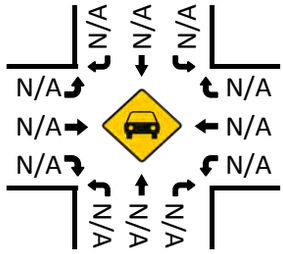
Cars (AM)



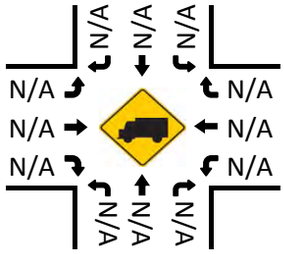
2axle (AM)



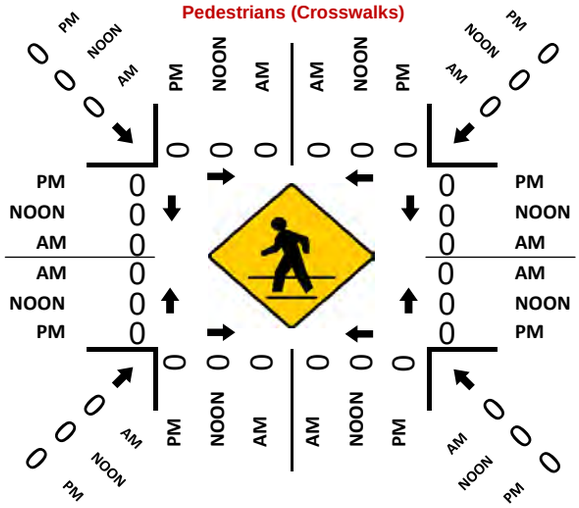
Cars (NOON)



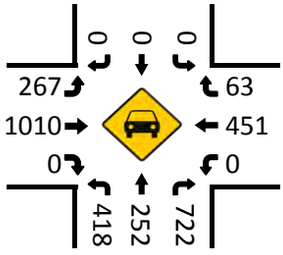
2axle (NOON)



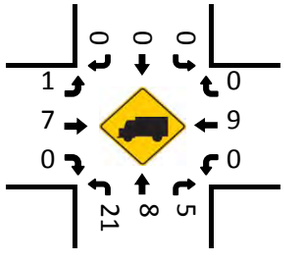
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



National Data & Surveying Services

Intersection Turning Movement Count

Location: LittleJohn St & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-013
Date: 4/10/2019

Total

NS/EW Streets:	LittleJohn St				LittleJohn St				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	1	0	0	5	0	3	0	7	63	0	0	0	275	24	0	385
7:15 AM	9	2	0	0	5	0	2	0	12	99	0	0	0	284	42	0	455
7:30 AM	5	2	0	0	4	0	3	0	13	113	0	1	0	230	57	0	428
7:45 AM	10	2	0	0	7	0	3	0	13	154	0	0	0	192	48	0	429
8:00 AM	2	1	0	0	4	0	7	0	11	148	0	0	0	221	42	0	436
8:15 AM	10	0	0	0	11	0	1	0	17	129	0	0	0	203	30	0	401
8:30 AM	14	0	1	0	2	0	4	0	14	125	0	0	0	203	30	0	393
8:45 AM	16	0	0	0	6	0	4	0	16	118	0	0	0	171	25	0	356
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	73	8	1	0	44	0	27	0	103	949	0	1	0	1779	298	0	3283
APPROACH %'s :	89.02%	9.76%	1.22%	0.00%	61.97%	0.00%	38.03%	0.00%	9.78%	90.12%	0.00%	0.09%	0.00%	85.65%	14.35%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	26	7	0	0	20	0	15	0	49	514	0	1	0	927	189	0	1748
PEAK HR FACTOR :	0.650	0.875	0.000	0.000	0.714	0.000	0.536	0.000	0.942	0.834	0.000	0.250	0.000	0.816	0.829	0.000	0.960
	0.688				0.795				0.844				0.856				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	22	0	8	0	7	389	0	0	0	135	3	0	565
4:15 PM	1	0	0	0	18	0	8	0	3	388	0	0	0	119	5	0	542
4:30 PM	1	0	3	0	46	0	28	0	6	409	0	0	0	131	1	0	625
4:45 PM	0	0	0	0	20	0	6	0	7	431	0	0	0	101	5	0	570
5:00 PM	0	0	0	0	44	0	24	0	3	424	0	0	0	115	5	0	615
5:15 PM	0	0	0	0	29	0	12	0	4	444	0	0	0	118	3	0	610
5:30 PM	0	0	0	0	21	0	9	0	5	438	0	0	0	110	6	0	589
5:45 PM	0	0	0	0	15	0	8	0	0	402	0	0	0	125	3	0	553
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	2	0	4	0	215	0	103	0	35	3325	0	0	0	954	31	0	4669
APPROACH %'s :	33.33%	0.00%	66.67%	0.00%	67.61%	0.00%	32.39%	0.00%	1.04%	98.96%	0.00%	0.00%	0.00%	96.85%	3.15%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	3	0	139	0	70	0	20	1708	0	0	0	465	14	0	2420
PEAK HR FACTOR :	0.250	0.000	0.250	0.000	0.755	0.000	0.625	0.000	0.714	0.962	0.000	0.000	0.000	0.887	0.700	0.000	0.968
	0.250				0.706				0.964				0.907				

National Data & Surveying Services

Intersection Turning Movement Count

Location: LittleJohn St & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-013
Date: 4/10/2019

Cars

NS/EW Streets:	LittleJohn St				LittleJohn St				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	5	0	2	0	7	60	0	0	0	271	22	0	367
7:15 AM	0	1	0	0	5	0	1	0	11	97	0	0	0	279	42	0	436
7:30 AM	0	0	0	0	3	0	1	0	12	110	0	0	0	221	57	0	404
7:45 AM	0	0	0	0	7	0	3	0	13	147	0	0	0	188	48	0	406
8:00 AM	0	0	0	0	3	0	5	0	11	138	0	0	0	217	40	0	414
8:15 AM	1	0	0	0	11	0	0	0	14	123	0	0	0	195	30	0	374
8:30 AM	0	0	0	0	1	0	3	0	14	116	0	0	0	199	29	0	362
8:45 AM	0	0	0	0	5	0	3	0	14	113	0	0	0	165	25	0	325
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	1	0	0	40	0	18	0	96	904	0	0	0	1735	293	0	3088
APPROACH %'s :	50.00%	50.00%	0.00%	0.00%	68.97%	0.00%	31.03%	0.00%	9.60%	90.40%	0.00%	0.00%	0.00%	85.55%	14.45%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	1	0	0	18	0	10	0	47	492	0	0	0	905	187	0	1660
PEAK HR FACTOR :	0.00	0.250	0.000	0.000	0.643	0.000	0.500	0.000	0.904	0.837	0.000	0.000	0.000	0.811	0.820	0.000	0.952
		0.250				0.700				0.842				0.850			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	1	0	21	0	6	0	6	381	0	0	0	131	2	0	548
4:15 PM	0	0	0	0	16	0	7	0	3	386	0	0	0	117	4	0	533
4:30 PM	1	0	3	0	44	0	27	0	6	399	0	0	0	130	1	0	611
4:45 PM	0	0	0	0	18	0	6	0	7	422	0	0	0	98	4	0	555
5:00 PM	0	0	0	0	43	0	24	0	2	421	0	0	0	111	5	0	606
5:15 PM	0	0	0	0	28	0	11	0	4	441	0	0	0	115	3	0	602
5:30 PM	0	0	0	0	21	0	9	0	5	437	0	0	0	110	5	0	587
5:45 PM	0	0	0	0	15	0	8	0	0	399	0	0	0	120	3	0	545
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	4	0	206	0	98	0	33	3286	0	0	0	932	27	0	4587
APPROACH %'s :	20.00%	0.00%	80.00%	0.00%	67.76%	0.00%	32.24%	0.00%	0.99%	99.01%	0.00%	0.00%	0.00%	97.18%	2.82%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	1	0	3	0	133	0	68	0	19	1683	0	0	0	454	13	0	2374
PEAK HR FACTOR :	0.25	0.000	0.250	0.000	0.756	0.000	0.630	0.000	0.679	0.954	0.000	0.000	0.000	0.873	0.650	0.000	0.971
		0.250				0.708				0.956				0.891			

National Data & Surveying Services

Intersection Turning Movement Count

Location: LittleJohn St & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-013
Date: 4/10/2019

2axle

NS/EW Streets:	LittleJohn St				LittleJohn St				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	4	2	0	8
7:15 AM	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	4
7:30 AM	0	0	0	0	1	0	1	0	0	1	0	1	0	7	0	0	11
7:45 AM	0	1	0	0	0	0	0	0	0	6	0	0	0	1	0	0	8
8:00 AM	0	0	0	0	0	0	1	0	0	6	0	0	0	1	2	0	10
8:15 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6
8:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	3	1	0	8
8:45 AM	0	0	0	0	1	0	0	0	1	4	0	0	0	4	0	0	10
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	1	0	0	2	0	2	0	2	28	0	1	0	24	5	0	65
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	50.00%	0.00%	50.00%	0.00%	6.45%	90.32%	0.00%	3.23%	0.00%	82.76%	17.24%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	0	1	0	0	1	0	2	0	1	14	0	1	0	11	2	0	33
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.583	0.000	0.250	0.000	0.393	0.250	0.000	0.750
		0.250				0.375				0.667				0.464			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	3	1	0	11
4:15 PM	0	0	0	0	2	0	1	0	0	2	0	0	0	2	1	0	8
4:30 PM	0	0	0	0	2	0	0	0	0	5	0	0	0	1	0	0	8
4:45 PM	0	0	0	0	1	0	0	0	0	8	0	0	0	2	1	0	12
5:00 PM	0	0	0	0	1	0	0	0	0	3	0	0	0	3	0	0	7
5:15 PM	0	0	0	0	1	0	0	0	0	3	0	0	0	3	0	0	7
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	5
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	7	0	1	0	0	30	0	0	0	17	4	0	59
APPROACH %'s :					87.50%	0.00%	12.50%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	80.95%	19.05%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	5	0	0	0	0	19	0	0	0	9	1	0	34
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.594	0.000	0.000	0.000	0.750	0.250	0.000	0.708
						0.625				0.594				0.833			

National Data & Surveying Services

Intersection Turning Movement Count

Location: LittleJohn St & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-013
Date: 4/10/2019

3axle

NS/EW Streets:	LittleJohn St				LittleJohn St				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	4
7:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	3
7:45 AM	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:30 AM	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	4
8:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	3	0	0	0	1	0	2	0	1	8	0	0	0	5	0	0	20
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%	11.11%	88.89%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	1	0	0	0	1	0	1	0	1	4	0	0	0	5	0	0	13
PEAK HR FACTOR :	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.500	0.000	0.000	0.000	0.417	0.000	0.000	0.813
	0.250				0.500				0.625				0.417				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	2	0	0	3	0	0	0	2	0	0	8
APPROACH %'s :					33.33%	0.00%	66.67%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	1	0	1	0	0	2	0	0	0	2	0	0	6
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.500
					0.500				0.250				0.500				

National Data & Surveying Services

Intersection Turning Movement Count

Location: LittleJohn St & Los Angeles St
City: Irwindale
Control: Signalized

Project ID: 19-05193-013
Date: 4/10/2019

4axle

NS/EW Streets:	LittleJohn St				LittleJohn St				Los Angeles St				Los Angeles St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	7	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	9
7:15 AM	9	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	11
7:30 AM	5	2	0	0	0	0	0	0	0	2	0	0	0	1	0	0	10
7:45 AM	9	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	13
8:00 AM	2	1	0	0	0	0	1	0	0	2	0	0	0	2	0	0	8
8:15 AM	9	0	0	0	0	0	1	0	3	1	0	0	0	6	0	0	20
8:30 AM	13	0	1	0	1	0	1	0	0	2	0	0	0	1	0	0	19
8:45 AM	15	0	0	0	0	0	1	0	1	1	0	0	0	2	0	0	20
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	69	6	1	0	1	0	5	0	4	9	0	0	0	15	0	0	110
APPROACH %'s :	90.79%	7.89%	1.32%	0.00%	16.67%	0.00%	83.33%	0.00%	30.77%	69.23%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	07:15 AM - 08:15 AM																TOTAL
PEAK HR VOL :	25	5	0	0	0	0	2	0	0	4	0	0	0	6	0	0	42
PEAK HR FACTOR :	0.694	0.625	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.808
	0.750				0.500				0.500				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	0	0	1	0	1	0	1	2	0	0	0	2	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	1	0	1	0	1	1	0	0	0	1	0	0	5
4:15 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
TOTAL VOLUMES :	1	0	0	0	1	0	2	0	2	6	0	0	0	3	0	0	15
APPROACH %'s :	100.00%	0.00%	0.00%	0.00%	33.33%	0.00%	66.67%	0.00%	25.00%	75.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	1	4	0	0	0	0	0	0	6
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.333	0.000	0.000	0.000	0.000	0.000	0.000	0.500
					0.250				0.417								

Prepared by National Data & Surveying Services

LittleJohn St & Los Angeles St

Peak Hour Turning Movement Count

ID: 19-05193-013
City: Irwindale

Day: Wednesday
Date: 04/10/2019

PEAK HOURS	COUNT PERIODS
07:15 AM - 08:15 AM	07:00 AM - 09:00 AM
NONE	NONE
04:30 PM - 05:30 PM	04:00 PM - 06:00 PM

SOUTHBOUND (LittleJohn St)

AM	15	0	20	0	245	AM
NOON	0	0	0	0	0	NOON
PM	70	0	139	0	34	PM
	1	0	1	0		

EASTBOUND (Los Angeles St)

AM	NOON	PM	
969	0	536	
1	0	0	0
49	0	20	1
514	0	1708	2
0	0	0	0

WESTBOUND (Los Angeles St)

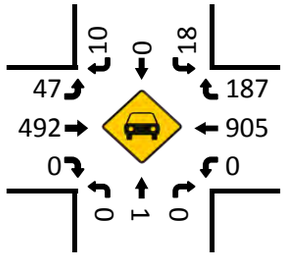
	PM	NOON	AM
0	14	0	189
2	465	0	927
0	0	0	0
0	0	0	0
	1850	0	534

NORTHBOUND (LittleJohn St)

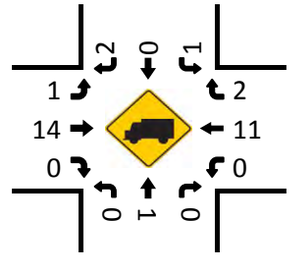
PM	0	0	1	0	3	PM
NOON	0	0	0	0	0	NOON
AM	0	0	26	7	0	AM
		0	0	1	0	

CONTROL			
Signalized			
TEV	1748	0	2420
	AM	NOON	PM
PHF	0.96		0.97

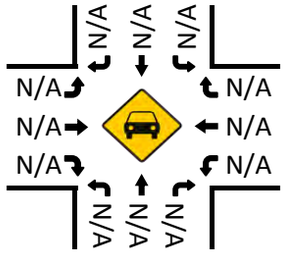
Cars (AM)



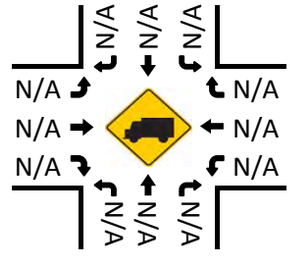
2axle (AM)



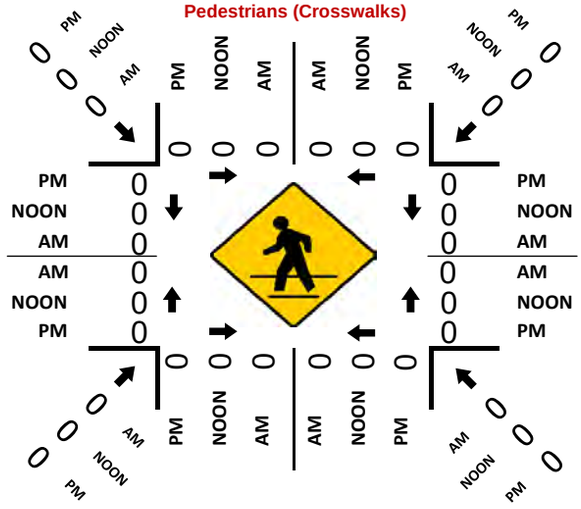
Cars (NOON)



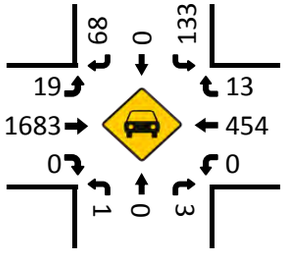
2axle (NOON)



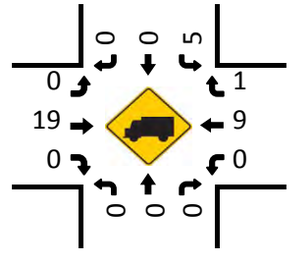
Pedestrians (Crosswalks)



Cars (PM)



2axle (PM)



APPENDIX C
Existing LOS Worksheets

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\Ex AM.pdf

Scenario 5 Existing AM
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	SB Right	1.134	-	F
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	WB Thru	0.017	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	NB Thru	0.723	-	C
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Right	0.337	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	WB Thru	0.849	-	D
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	SB Right	1.579	1,081.6	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	WB Thru	0.655	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	WB Thru	0.649	-	B
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.311	24.1	C
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Thru	0.475	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	WB Thru	0.788	-	C
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Thru	0.913	-	E
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	WB Thru	0.578	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.134

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	499	844	0	695	1586	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	499	844	0	695	1586	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	211	0	174	397	0
Total Analysis Volume [veh/h]	499	844	0	695	1586	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.31	0.53	0.00	0.14	0.50	0.00
Intersection LOS	F					
Intersection V/C	1.134					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.017

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	735	334	0	1691	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	735	334	0	1691	399
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	184	84	0	423	100
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	735	334	0	1691	399
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.723

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	140	1624	501	334	333	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	140	1624	501	334	333	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	35	406	125	84	83	3
Total Analysis Volume [veh/h]	140	1624	501	334	333	12
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.51	0.16	0.21	0.10	0.01
Intersection LOS	C					
Intersection V/C	0.723					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.337

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	2	8	112	14	9	15	33	227	17	106	365	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	8	112	14	9	15	33	227	17	106	365	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	28	4	2	4	8	57	4	27	91	4
Total Analysis Volume [veh/h]	2	8	112	14	9	15	33	227	17	106	365	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.08	0.08	0.01	0.01	0.01	0.02	0.08	0.08	0.07	0.12	0.12
Intersection LOS	A											
Intersection V/C	0.337											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.849

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	321	541	639	1430
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	321	541	639	1430
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	80	135	160	358
Total Analysis Volume [veh/h]	0	0	321	541	639	1430
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.34	0.40	0.45
Intersection LOS	D					
Intersection V/C	0.849					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	1,081.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.579

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	164	0	0	153	0	94	0	0	345	0
Total Analysis Volume [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.80	0.00	0.00	1.58	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	25.68	0.00	0.00	1081.60	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			D			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	10.40	0.00	0.00	120.08	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	259.91	0.00	0.00	3001.91	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	25.68			1081.60			0.00			0.00		
Approach LOS	D			F			A			A		
d_I, Intersection Delay [s/veh]	225.11											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.655

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	101	75	796	123	19	1390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	101	75	796	123	19	1390
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	19	199	31	5	348
Total Analysis Volume [veh/h]	101	75	796	123	19	1390
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.11	0.29	0.29	0.01	0.43
Intersection LOS	B					
Intersection V/C	0.655					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.649

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	61	146	183	19	300	52	86	663	118	313	1128	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	61	146	183	19	300	52	86	663	118	313	1128	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	15	37	46	5	75	13	22	166	30	78	282	5
Total Analysis Volume [veh/h]	61	146	183	19	300	52	86	663	118	313	1128	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.09	0.00	0.01	0.09	0.03	0.05	0.21	0.07	0.20	0.35	0.01
Intersection LOS	B											
Intersection V/C	0.649											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	24.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.311

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	454	103	20	705	85	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	454	103	20	705	85	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	114	26	5	176	21	2
Total Analysis Volume [veh/h]	454	103	20	705	85	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	0.31	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.64	0.00	24.07	10.07
Movement LOS	A	A	A	A	C	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	1.33	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.52	0.00	33.36	0.95
d_A, Approach Delay [s/veh]	0.00		0.24		22.73	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.68					
Intersection LOS	C					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.475

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	561	77	126	474	57	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	561	77	126	474	57	138
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	140	19	32	119	14	35
Total Analysis Volume [veh/h]	561	77	126	474	57	138
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.20	0.20	0.08	0.15	0.04	0.09
Intersection LOS	A					
Intersection V/C	0.475					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.788

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	89	314	511	0	498	357	422	913	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	89	314	511	0	498	357	422	913	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	22	79	128	0	125	89	106	228	0
Total Analysis Volume [veh/h]	0	0	0	89	314	511	0	498	357	422	913	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.06	0.19	0.19	0.00	0.16	0.22	0.26	0.29	0.00
Intersection LOS	C											
Intersection V/C	0.788											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.913

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	384	453	207	0	0	0	311	380	0	0	899	155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	384	453	207	0	0	0	311	380	0	0	899	155
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	113	52	0	0	0	78	95	0	0	225	39
Total Analysis Volume [veh/h]	384	453	207	0	0	0	311	380	0	0	899	155
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.33	0.33	0.00	0.00	0.00	0.19	0.12	0.00	0.00	0.28	0.10
Intersection LOS	E											
Intersection V/C	0.913											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.578

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	78	18	0	23	0	23	54	542	0	0	958	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	18	0	23	0	23	54	542	0	0	958	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	5	0	6	0	6	14	136	0	0	240	48
Total Analysis Volume [veh/h]	78	18	0	23	0	23	54	542	0	0	958	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.01	0.00	0.01	0.03	0.17	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.578											

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\Ex PM.pdf

Scenario 6 Existing PM
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	EB Thru	0.620	-	B
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	EB Thru	0.014	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	SB Thru	0.625	-	B
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Left	0.356	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	EB Right	1.248	-	F
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	NB Right	1.315	606.9	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	EB Thru	0.670	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	EB Thru	0.961	-	E
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.404	25.1	D
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Thru	0.370	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	EB Thru	0.796	-	C
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Thru	0.916	-	E
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	EB Thru	0.748	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.620

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	269	347	0	1400	477	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	269	347	0	1400	477	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	67	87	0	350	119	0
Total Analysis Volume [veh/h]	269	347	0	1400	477	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.22	0.00	0.29	0.15	0.00
Intersection LOS	B					
Intersection V/C	0.620					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.014

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	1382	140	0	441	256
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	1382	140	0	441	256
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	346	35	0	110	64
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	1382	140	0	441	256
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.625

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	46	491	1326	225	225	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	46	491	1326	225	225	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	123	332	56	56	7
Total Analysis Volume [veh/h]	46	491	1326	225	225	27
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.15	0.41	0.14	0.07	0.02
Intersection LOS	B					
Intersection V/C	0.625					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.356

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	5	4	71	21	14	25	21	164	45	192	64	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	4	71	21	14	25	21	164	45	192	64	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	18	5	4	6	5	41	11	48	16	4
Total Analysis Volume [veh/h]	5	4	71	21	14	25	21	164	45	192	64	16
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.05	0.01	0.02	0.02	0.01	0.07	0.07	0.12	0.03	0.03
Intersection LOS	A											
Intersection V/C	0.356											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.248

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	1038	1274	545	996
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1038	1274	545	996
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	260	319	136	249
Total Analysis Volume [veh/h]	0	0	1038	1274	545	996
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.32	0.80	0.34	0.31
Intersection LOS	F					
Intersection V/C	1.248					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	606.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.315

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	165	0	0	149	0	259	0	0	240	0
Total Analysis Volume [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	1.31	0.00	0.00	1.12	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	606.88	0.00	0.00	278.10	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	89.97	0.00	0.00	49.78	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2249.17	0.00	0.00	1244.47	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	606.88			278.10			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	174.14											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.670

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	22	14	1675	22	9	937
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	14	1675	22	9	937
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	4	419	6	2	234
Total Analysis Volume [veh/h]	22	14	1675	22	9	937
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.53	0.53	0.01	0.29
Intersection LOS	B					
Intersection V/C	0.670					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.961

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	164	156	552	24	29	78	42	1568	28	109	663	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	164	156	552	24	29	78	42	1568	28	109	663	29
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	39	138	6	7	20	11	392	7	27	166	7
Total Analysis Volume [veh/h]	164	156	552	24	29	78	42	1568	28	109	663	29
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.10	0.28	0.02	0.01	0.05	0.03	0.49	0.02	0.07	0.21	0.02
Intersection LOS	E											
Intersection V/C	0.961											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	25.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.404

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	715	27	5	214	121	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	715	27	5	214	121	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	179	7	1	54	30	13
Total Analysis Volume [veh/h]	715	27	5	214	121	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.40	0.08
d_M, Delay for Movement [s/veh]	0.00	0.00	9.21	0.00	25.08	11.28
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	1.99	0.28
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.44	0.00	49.66	6.93
d_A, Approach Delay [s/veh]	0.00		0.21		20.87	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.24					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.370

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	459	12	81	386	78	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	459	12	81	386	78	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	115	3	20	97	20	25
Total Analysis Volume [veh/h]	459	12	81	386	78	98
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.15	0.05	0.12	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.370					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.796

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	135	324	286	0	1185	501	255	716	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	135	324	286	0	1185	501	255	716	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	34	81	72	0	296	125	64	179	0
Total Analysis Volume [veh/h]	0	0	0	135	324	286	0	1185	501	255	716	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.08	0.16	0.16	0.00	0.37	0.31	0.16	0.22	0.00
Intersection LOS	C											
Intersection V/C	0.796											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.916

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	501	300	738	0	0	0	280	1030	0	0	477	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	501	300	738	0	0	0	280	1030	0	0	477	63
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	75	185	0	0	0	70	258	0	0	119	16
Total Analysis Volume [veh/h]	501	300	738	0	0	0	280	1030	0	0	477	63
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.31	0.48	0.48	0.00	0.00	0.00	0.18	0.32	0.00	0.00	0.15	0.04
Intersection LOS	E											
Intersection V/C	0.916											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.748

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	1	0	3	146	0	74	22	1738	0	0	477	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	3	146	0	74	22	1738	0	0	477	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	1	37	0	19	6	435	0	0	119	4
Total Analysis Volume [veh/h]	1	0	3	146	0	74	22	1738	0	0	477	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.05	0.01	0.54	0.00	0.00	0.15	0.15
Intersection LOS	C											
Intersection V/C	0.748											

APPENDIX D
Existing With-Project LOS Worksheets

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\Ex+P AM.pdf

Scenario 3 Existing+Project AM
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	SB Right	1.134	-	F
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	WB Thru	0.017	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	NB Thru	0.730	-	C
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Thru	0.350	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	WB Thru	0.862	-	D
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	SB Right	1.606	1,129.3	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	WB Thru	0.662	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	WB Thru	0.679	-	B
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.346	27.4	D
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Thru	0.490	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	WB Left	0.849	-	D
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Thru	1.002	-	F
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	WB Thru	0.581	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.134

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	499	844	0	695	1586	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	544	844	0	695	1586	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	211	0	174	397	0
Total Analysis Volume [veh/h]	544	844	0	695	1586	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.34	0.53	0.00	0.14	0.50	0.00
Intersection LOS	F					
Intersection V/C	1.134					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.017

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	735	334	0	1691	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	45	0	0	0	22
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	780	334	0	1691	421
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	195	84	0	423	105
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	780	334	0	1691	421
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.730

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	140	1624	501	334	333	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	0	45	22	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	1624	501	379	355	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	406	125	95	89	3
Total Analysis Volume [veh/h]	146	1624	501	379	355	12
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.51	0.16	0.24	0.11	0.01
Intersection LOS	C					
Intersection V/C	0.730					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.350

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	2	8	112	14	9	15	33	227	17	106	365	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	22	0	0	51	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	8	112	14	9	15	33	249	17	106	416	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	28	4	2	4	8	62	4	27	104	4
Total Analysis Volume [veh/h]	2	8	112	14	9	15	33	249	17	106	416	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.08	0.08	0.01	0.01	0.01	0.02	0.08	0.08	0.07	0.13	0.13
Intersection LOS	A											
Intersection V/C	0.350											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.862

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	321	541	639	1430
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	22	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	321	541	661	1430
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	80	135	165	358
Total Analysis Volume [veh/h]	0	0	321	541	661	1430
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.10	0.34	0.41	0.45
Intersection LOS	D					
Intersection V/C	0.862					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	1,129.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.606

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	22	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	655	0	0	613	0	374	0	0	1400	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	164	0	0	153	0	94	0	0	350	0
Total Analysis Volume [veh/h]	0	0	655	0	0	613	0	374	0	0	1400	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.80	0.00	0.00	1.61	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	25.68	0.00	0.00	1129.29	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			D			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	10.40	0.00	0.00	123.10	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	259.91	0.00	0.00	3077.43	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	25.68			1129.29			0.00			0.00		
Approach LOS	D			F			A			A		
d_I, Intersection Delay [s/veh]	233.09											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.662

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	101	75	796	123	19	1390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	22
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	101	75	796	123	19	1412
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	25	19	199	31	5	353
Total Analysis Volume [veh/h]	101	75	796	123	19	1412
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.06	0.11	0.29	0.29	0.01	0.44
Intersection LOS	B					
Intersection V/C	0.662					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.679

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	61	146	183	19	300	52	86	663	118	313	1128	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	22	3	0	51	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	83	168	186	19	351	52	86	663	118	313	1128	19
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	42	47	5	88	13	22	166	30	78	282	5
Total Analysis Volume [veh/h]	83	168	186	19	351	52	86	663	118	313	1128	19
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	7	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.11	0.00	0.01	0.11	0.03	0.05	0.21	0.07	0.20	0.35	0.01
Intersection LOS	B											
Intersection V/C	0.679											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	27.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.346

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	454	103	20	705	85	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	47	0	0	51	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	501	103	20	756	85	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	26	5	189	21	2
Total Analysis Volume [veh/h]	501	103	20	756	85	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.35	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.79	0.00	27.40	10.25
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	1.56	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.58	0.00	39.00	0.99
d_A, Approach Delay [s/veh]	0.00		0.23		25.76	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.76					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	561	77	126	474	57	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	47	0	0	51	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	608	77	126	525	57	138
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	152	19	32	131	14	35
Total Analysis Volume [veh/h]	608	77	126	525	57	138
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.21	0.08	0.16	0.04	0.09
Intersection LOS	A					
Intersection V/C	0.490					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.849

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	89	314	511	0	498	357	422	913	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	141	0	0	0	6	0	50	3	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	230	314	511	0	504	357	472	916	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	58	79	128	0	126	89	118	229	0
Total Analysis Volume [veh/h]	0	0	0	230	314	511	0	504	357	472	916	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.14	0.22	0.22	0.00	0.16	0.22	0.30	0.29	0.00
Intersection LOS	D											
Intersection V/C	0.849											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.002

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	384	453	207	0	0	0	311	380	0	0	899	155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	72	72	0	0	0	45	102	0	0	53	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	384	525	279	0	0	0	356	482	0	0	952	200
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	96	131	70	0	0	0	89	121	0	0	238	50
Total Analysis Volume [veh/h]	384	525	279	0	0	0	356	482	0	0	952	200
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.24	0.37	0.37	0.00	0.00	0.00	0.22	0.15	0.00	0.00	0.30	0.13
Intersection LOS	F											
Intersection V/C	1.002											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.581

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	78	18	0	23	0	23	54	542	0	0	958	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	4	0	0	9	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	78	18	0	23	0	23	54	546	0	0	967	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	5	0	6	0	6	14	137	0	0	242	48
Total Analysis Volume [veh/h]	78	18	0	23	0	23	54	546	0	0	967	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.01	0.00	0.01	0.03	0.17	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.581											

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\Ex+P AM.pdf

Scenario 3 Existing+Project AM
1/22/2020

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	301	149	450	100.00
					Added Trips Total			**301**	**149**	**450**	**100.00**

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\Ex+P PM.pdf

Scenario 4 Existing+Project PM
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	EB Thru	0.620	-	B
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	EB Thru	0.014	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	SB Thru	0.639	-	B
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Left	0.369	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	EB Right	1.273	-	F
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	NB Right	1.315	606.9	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	EB Thru	0.670	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	EB Thru	0.964	-	E
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.466	30.8	D
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Right	0.397	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	EB Thru	0.866	-	D
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Thru	0.980	-	E
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	EB Thru	0.750	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.620

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	269	347	0	1400	477	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	290	347	0	1400	477	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	73	87	0	350	119	0
Total Analysis Volume [veh/h]	290	347	0	1400	477	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.22	0.00	0.29	0.15	0.00
Intersection LOS	B					
Intersection V/C	0.620					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.014

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	1382	140	0	441	256
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	21	0	0	0	40
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	1403	140	0	441	296
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	351	35	0	110	74
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	1403	140	0	441	296
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.639

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	46	491	1326	225	225	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	0	0	21	40	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	49	491	1326	246	265	27
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	123	332	62	66	7
Total Analysis Volume [veh/h]	49	491	1326	246	265	27
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.15	0.41	0.15	0.08	0.02
Intersection LOS	B					
Intersection V/C	0.639					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.369

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	5	4	71	21	14	25	21	164	45	192	64	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	40	0	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	4	71	21	14	25	21	204	45	192	88	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	18	5	4	6	5	51	11	48	22	4
Total Analysis Volume [veh/h]	5	4	71	21	14	25	21	204	45	192	88	16
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.05	0.01	0.02	0.02	0.01	0.08	0.08	0.12	0.03	0.03
Intersection LOS	A											
Intersection V/C	0.369											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.273

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	1038	1274	545	996
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	40	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1038	1274	585	996
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	260	319	146	249
Total Analysis Volume [veh/h]	0	0	1038	1274	585	996
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.32	0.80	0.37	0.31
Intersection LOS	F					
Intersection V/C	1.273					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	606.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.315

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	40	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	660	0	0	596	0	1037	0	0	999	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	165	0	0	149	0	259	0	0	250	0
Total Analysis Volume [veh/h]	0	0	660	0	0	596	0	1037	0	0	999	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	1.31	0.00	0.00	1.15	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	606.88	0.00	0.00	333.56	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	89.97	0.00	0.00	55.73	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2249.17	0.00	0.00	1393.33	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	606.88			333.56			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	182.06											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.670

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	22	14	1675	22	9	937
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	40
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	22	14	1675	22	9	977
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	4	419	6	2	244
Total Analysis Volume [veh/h]	22	14	1675	22	9	977
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.53	0.53	0.01	0.31
Intersection LOS	B					
Intersection V/C	0.670					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.964

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	164	156	552	24	29	78	42	1568	28	109	663	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	40	40	5	0	24	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	196	557	24	53	78	42	1568	28	109	663	29
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	51	49	139	6	13	20	11	392	7	27	166	7
Total Analysis Volume [veh/h]	204	196	557	24	53	78	42	1568	28	109	663	29
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.12	0.28	0.02	0.02	0.05	0.03	0.49	0.02	0.07	0.21	0.02
Intersection LOS	E											
Intersection V/C	0.964											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	30.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.466

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	715	27	5	214	121	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	85	0	0	24	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	800	27	5	238	121	53
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	200	7	1	60	30	13
Total Analysis Volume [veh/h]	800	27	5	238	121	53
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.47	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	9.53	0.00	30.84	11.73
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	2.53	0.30
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.47	0.00	63.21	7.43
d_A, Approach Delay [s/veh]	0.00		0.20		25.02	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	3.54					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.397

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	459	12	81	386	78	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	85	0	0	24	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	544	12	81	410	78	98
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	136	3	20	103	20	25
Total Analysis Volume [veh/h]	544	12	81	410	78	98
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.17	0.17	0.05	0.13	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.397					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.866

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	135	324	286	0	1185	501	255	716	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	66	0	0	0	3	0	88	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	201	324	286	0	1188	501	343	721	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	50	81	72	0	297	125	86	180	0
Total Analysis Volume [veh/h]	0	0	0	201	324	286	0	1188	501	343	721	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.13	0.17	0.17	0.00	0.37	0.31	0.21	0.23	0.00
Intersection LOS	D											
Intersection V/C	0.866											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.980

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	501	300	738	0	0	0	280	1030	0	0	477	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	34	34	0	0	0	21	48	0	0	93	80
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	501	334	772	0	0	0	301	1078	0	0	570	143
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	125	84	193	0	0	0	75	270	0	0	143	36
Total Analysis Volume [veh/h]	501	334	772	0	0	0	301	1078	0	0	570	143
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.31	0.50	0.50	0.00	0.00	0.00	0.19	0.34	0.00	0.00	0.18	0.09
Intersection LOS	E											
Intersection V/C	0.980											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.750

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	1	0	3	146	0	74	22	1738	0	0	477	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	8	0	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	3	146	0	74	22	1746	0	0	481	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	1	37	0	19	6	437	0	0	120	4
Total Analysis Volume [veh/h]	1	0	3	146	0	74	22	1746	0	0	481	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.05	0.01	0.55	0.00	0.00	0.16	0.16
Intersection LOS	C											
Intersection V/C	0.750											

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\Ex+P PM.pdf

Scenario 4 Existing+Project PM
1/22/2020

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	140	266	406	100.00
					Added Trips Total			**140**	**266**	**406**	**100.00**

APPENDIX E
Future Without-Project LOS Worksheets

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\FNP AM.pdf

Scenario 7 Future no Project AM
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	SB Right	1.365	-	F
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	WB Thru	0.018	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	NB Thru	0.748	-	C
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Thru	0.346	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	WB Thru	0.935	-	E
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	SB Right	2.878	3,409.4	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	WB Thru	0.685	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	WB Thru	0.700	-	C
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.340	26.0	D
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Thru	0.490	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	WB Thru	0.827	-	D
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Thru	0.965	-	E
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	WB Thru	0.586	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.365

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	499	844	0	695	1586	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	302	0	65	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	519	1180	0	788	1653	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	295	0	197	413	0
Total Analysis Volume [veh/h]	519	1180	0	788	1653	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.32	0.74	0.00	0.16	0.52	0.00
Intersection LOS	F					
Intersection V/C	1.365					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.018

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	735	334	0	1691	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	15	50	0	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	779	397	0	1763	415
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	195	99	0	441	104
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	779	397	0	1763	415
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.748

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	140	1624	501	334	333	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	4	15	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	146	1693	536	347	346	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	423	134	87	87	3
Total Analysis Volume [veh/h]	146	1693	536	347	346	12
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.09	0.53	0.17	0.22	0.11	0.01
Intersection LOS	C					
Intersection V/C	0.748					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.346

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	2	8	112	14	9	15	33	227	17	106	365	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	8	116	15	9	16	34	236	18	110	380	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	29	4	2	4	9	59	5	28	95	4
Total Analysis Volume [veh/h]	2	8	116	15	9	16	34	236	18	110	380	16
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.08	0.08	0.01	0.01	0.01	0.02	0.08	0.08	0.07	0.12	0.12
Intersection LOS	A											
Intersection V/C	0.346											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.935

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	321	541	639	1430
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	15	70	20	418
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	349	633	685	1905
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	87	158	171	476
Total Analysis Volume [veh/h]	0	0	349	633	685	1905
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.11	0.40	0.43	0.60
Intersection LOS	E					
Intersection V/C	0.935					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	3,409.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	2.878

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	91	0	0	414	0	15	0	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1457	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	193	0	0	263	0	101	0	0	364	0
Total Analysis Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1457	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.96	0.00	0.00	2.88	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	67.77	0.00	0.00	3409.40	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	26.74	0.00	0.00	347.74	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	668.48	0.00	0.00	8693.53	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	67.77			3409.40			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	987.52											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.685

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	101	75	796	123	19	1390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	106	0	0	24
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	78	934	128	20	1470
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	20	234	32	5	368
Total Analysis Volume [veh/h]	105	78	934	128	20	1470
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.33	0.33	0.01	0.46
Intersection LOS	B					
Intersection V/C	0.685					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.700

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	61	146	183	19	300	52	86	663	118	313	1128	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	106	0	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	63	152	190	20	312	54	89	796	123	326	1197	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	16	38	48	5	78	14	22	199	31	82	299	5
Total Analysis Volume [veh/h]	63	152	190	20	312	54	89	796	123	326	1197	20
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.04	0.10	0.00	0.01	0.10	0.03	0.06	0.25	0.08	0.20	0.37	0.01
Intersection LOS	C											
Intersection V/C	0.700											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	26.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.340

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	454	103	20	705	85	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	472	107	21	733	88	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	118	27	5	183	22	2
Total Analysis Volume [veh/h]	472	107	21	733	88	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.02	0.01	0.34	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.71	0.00	26.03	10.16
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.06	0.00	1.52	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.62	0.00	37.95	0.97
d_A, Approach Delay [s/veh]	0.00		0.24		24.55	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	1.79					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.490

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	561	77	126	474	57	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	583	80	131	493	59	144
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	146	20	33	123	15	36
Total Analysis Volume [veh/h]	583	80	131	493	59	144
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.21	0.21	0.08	0.15	0.04	0.09
Intersection LOS	A					
Intersection V/C	0.490					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.827

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	89	314	511	0	498	357	422	913	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	2	0	6	5	12	2	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	93	327	533	0	524	376	451	952	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	23	82	133	0	131	94	113	238	0
Total Analysis Volume [veh/h]	0	0	0	93	327	533	0	524	376	451	952	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.06	0.20	0.20	0.00	0.16	0.24	0.28	0.30	0.00
Intersection LOS	D											
Intersection V/C	0.827											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.965

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	384	453	207	0	0	0	311	380	0	0	899	155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	0	43	0	0	0	5	1	0	0	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	401	471	258	0	0	0	328	396	0	0	947	161
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	118	65	0	0	0	82	99	0	0	237	40
Total Analysis Volume [veh/h]	401	471	258	0	0	0	328	396	0	0	947	161
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.25	0.35	0.35	0.00	0.00	0.00	0.21	0.12	0.00	0.00	0.30	0.10
Intersection LOS	E											
Intersection V/C	0.965											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.586

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	78	18	0	23	0	23	54	542	0	0	958	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	44	0	0	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	19	0	23	0	24	56	586	0	0	970	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	5	0	6	0	6	14	147	0	0	243	48
Total Analysis Volume [veh/h]	81	19	0	23	0	24	56	586	0	0	970	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.01	0.00	0.02	0.04	0.18	0.00	0.00	0.36	0.36
Intersection LOS	A											
Intersection V/C	0.586											

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\FNP AM.pdf

Scenario 7 Future no Project AM
1/22/2020

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
9: Zone 1				1.000	0.000	50.00	50.00	236	66	302	13.39
10: Zone 2				1.000	0.000	50.00	50.00	606	136	742	32.89
11: Zone 5				1.000	0.000	50.00	50.00	1006	168	1174	52.04
12: Zone 4: El Monte Projects				1.000	0.000	50.00	50.00	8	20	28	1.24
14: Zone 3: Baldwin Park				1.000	0.000	50.00	50.00	2	8	10	0.44
					Added Trips Total			**1858**	**398**	**2256**	**100.00**

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\FNP PM.pdf

Scenario 8 Future no Project Pm
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	EB Thru	0.764	-	C
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	EB Thru	0.014	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	SB Thru	0.646	-	B
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Left	0.367	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	EB Right	1.614	-	F
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	SB Right	1.556	1,033.8	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	EB Thru	0.700	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	EB Thru	1.003	-	F
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.442	27.5	D
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Thru	0.380	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	EB Thru	0.850	-	D
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Right	0.969	-	E
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	EB Thru	0.752	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.764

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	269	347	0	1400	477	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	93	0	316	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	280	454	0	1772	510	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	70	114	0	443	128	0
Total Analysis Volume [veh/h]	280	454	0	1772	510	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.28	0.00	0.37	0.16	0.00
Intersection LOS	C					
Intersection V/C	0.764					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.014

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	1382	140	0	441	256
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	4	312	0	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	1441	458	0	473	266
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	360	115	0	118	67
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	1441	458	0	473	266
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.646

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	46	491	1326	225	225	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	14	4	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	48	525	1383	234	234	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	12	131	346	59	59	7
Total Analysis Volume [veh/h]	48	525	1383	234	234	28
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.16	0.43	0.15	0.07	0.02
Intersection LOS	B					
Intersection V/C	0.646					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.367

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	5	4	71	21	14	25	21	164	45	192	64	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	4	74	22	15	26	22	171	47	200	67	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	19	6	4	7	6	43	12	50	17	4
Total Analysis Volume [veh/h]	5	4	74	22	15	26	22	171	47	200	67	17
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.05	0.01	0.02	0.02	0.01	0.07	0.07	0.13	0.03	0.03
Intersection LOS	A											
Intersection V/C	0.367											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.614

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	1038	1274	545	996
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	430	82	143
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1084	1755	649	1179
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	271	439	162	295
Total Analysis Volume [veh/h]	0	0	1084	1755	649	1179
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.34	1.10	0.41	0.37
Intersection LOS	F					
Intersection V/C	1.614					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	1,033.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.556

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	20	0	0	129	0	4	0	0	96	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1093	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	177	0	0	187	0	271	0	0	273	0
Total Analysis Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1093	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	1.45	0.00	0.00	1.56	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	853.72	0.00	0.00	1033.76	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	119.20	0.00	0.00	141.74	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2980.01	0.00	0.00	3543.57	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	853.72			1033.76			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	379.34											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.700

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	22	14	1675	22	9	937
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	24	0	0	96
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	15	1766	23	9	1070
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	4	442	6	2	268
Total Analysis Volume [veh/h]	23	15	1766	23	9	1070
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.56	0.56	0.01	0.33
Intersection LOS	B					
Intersection V/C	0.700					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.003

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	164	156	552	24	29	78	42	1568	28	109	663	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	24	0	0	96	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	171	162	574	25	30	81	44	1655	29	113	786	30
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	41	144	6	8	20	11	414	7	28	197	8
Total Analysis Volume [veh/h]	171	162	574	25	30	81	44	1655	29	113	786	30
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.11	0.10	0.29	0.02	0.01	0.05	0.03	0.52	0.02	0.07	0.25	0.02
Intersection LOS	F											
Intersection V/C	1.003											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	27.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.442

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	715	27	5	214	121	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	744	28	5	223	126	55
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	186	7	1	56	32	14
Total Analysis Volume [veh/h]	744	28	5	223	126	55
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.44	0.09
d_M, Delay for Movement [s/veh]	0.00	0.00	9.32	0.00	27.54	11.46
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	2.31	0.30
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.45	0.00	57.75	7.39
d_A, Approach Delay [s/veh]	0.00		0.20		22.65	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	3.51					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.380

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	459	12	81	386	78	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	477	12	84	401	81	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	119	3	21	100	20	26
Total Analysis Volume [veh/h]	477	12	84	401	81	102
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.15	0.15	0.05	0.13	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.380					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.850

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	135	324	286	0	1185	501	255	716	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	6	0	5	4	39	7	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	140	337	303	0	1237	525	304	752	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	35	84	76	0	309	131	76	188	0
Total Analysis Volume [veh/h]	0	0	0	140	337	303	0	1237	525	304	752	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.16	0.16	0.00	0.39	0.33	0.19	0.24	0.00
Intersection LOS	D											
Intersection V/C	0.850											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.969

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	501	300	738	0	0	0	280	1030	0	0	477	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	0	12	0	0	0	4	1	0	0	40	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	527	312	780	0	0	0	295	1072	0	0	536	66
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	132	78	195	0	0	0	74	268	0	0	134	17
Total Analysis Volume [veh/h]	527	312	780	0	0	0	295	1072	0	0	536	66
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.51	0.51	0.00	0.00	0.00	0.18	0.34	0.00	0.00	0.17	0.04
Intersection LOS	E											
Intersection V/C	0.969											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.752

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	1	0	3	146	0	74	22	1738	0	0	477	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	13	0	0	40	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	3	146	0	77	23	1751	0	0	517	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	1	37	0	19	6	438	0	0	129	4
Total Analysis Volume [veh/h]	1	0	3	146	0	77	23	1751	0	0	517	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.05	0.01	0.55	0.00	0.00	0.17	0.17
Intersection LOS	C											
Intersection V/C	0.752											

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\FNP PM.pdf

Scenario 8 Future no Project Pm
1/22/2020

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
9: Zone 1				1.000	0.000	50.00	50.00	105	271	376	15.30
10: Zone 2				1.000	0.000	50.00	50.00	136	544	680	27.66
11: Zone 5				1.000	0.000	50.00	50.00	310	1041	1351	54.96
12: Zone 4: El Monte Projects				1.000	0.000	50.00	50.00	24	14	38	1.55
14: Zone 3: Baldwin Park				1.000	0.000	50.00	50.00	8	5	13	0.53
					Added Trips Total			**583**	**1875**	**2458**	**100.00**

APPENDIX F
Future With-Project LOS Worksheets

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\F+P AM.pdf

Scenario 9 Future with Project AM
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	SB Right	1.365	-	F
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	WB Thru	0.018	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	NB Thru	0.755	-	C
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Thru	0.359	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	WB Thru	0.949	-	E
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	SB Right	2.926	3,496.9	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	WB Thru	0.692	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	WB Thru	0.730	-	C
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.379	29.9	D
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Thru	0.505	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	WB Left	0.887	-	D
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Thru	1.055	-	F
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	WB Right	0.589	-	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.365

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	499	844	0	695	1586	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	45	302	0	65	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	564	1180	0	788	1653	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	141	295	0	197	413	0
Total Analysis Volume [veh/h]	564	1180	0	788	1653	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.35	0.74	0.00	0.16	0.52	0.00
Intersection LOS	F					
Intersection V/C	1.365					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.018

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	735	334	0	1691	399
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	60	50	0	4	22
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	824	397	0	1763	437
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	206	99	0	441	109
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	824	397	0	1763	437
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.02	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.755

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	140	1624	501	334	333	12
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	4	15	45	22	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	152	1693	536	392	368	12
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	423	134	98	92	3
Total Analysis Volume [veh/h]	152	1693	536	392	368	12
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.10	0.53	0.17	0.25	0.12	0.01
Intersection LOS	C					
Intersection V/C	0.755					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.359

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	2	8	112	14	9	15	33	227	17	106	365	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	22	0	0	51	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2	8	116	15	9	16	34	258	18	110	431	16
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	2	29	4	2	4	9	65	5	28	108	4
Total Analysis Volume [veh/h]	2	8	116	15	9	16	34	258	18	110	431	16
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.08	0.08	0.01	0.01	0.01	0.02	0.09	0.09	0.07	0.14	0.14
Intersection LOS	A											
Intersection V/C	0.359											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.949

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	321	541	639	1430
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	15	70	42	418
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	349	633	707	1905
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	87	158	177	476
Total Analysis Volume [veh/h]	0	0	349	633	707	1905
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.11	0.40	0.44	0.60
Intersection LOS	E					
Intersection V/C	0.949					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	3,496.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	2.926

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	91	0	0	414	0	15	0	0	46	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1479	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	193	0	0	263	0	101	0	0	370	0
Total Analysis Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1479	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.96	0.00	0.00	2.93	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	67.77	0.00	0.00	3496.92	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	26.74	0.00	0.00	350.73	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	668.48	0.00	0.00	8768.26	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	67.77			3496.92			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1006.49											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.692

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	101	75	796	123	19	1390
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	106	0	0	46
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	105	78	934	128	20	1492
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	26	20	234	32	5	373
Total Analysis Volume [veh/h]	105	78	934	128	20	1492
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.07	0.11	0.33	0.33	0.01	0.47
Intersection LOS	B					
Intersection V/C	0.692					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.730

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	61	146	183	19	300	52	86	663	118	313	1128	19
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	22	22	3	0	51	0	0	106	0	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	85	174	193	20	363	54	89	796	123	326	1197	20
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	21	44	48	5	91	14	22	199	31	82	299	5
Total Analysis Volume [veh/h]	85	174	193	20	363	54	89	796	123	326	1197	20
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.11	0.00	0.01	0.11	0.03	0.06	0.25	0.08	0.20	0.37	0.01
Intersection LOS	C											
Intersection V/C	0.730											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	29.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.379

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	454	103	20	705	85	9
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	47	0	0	51	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	519	107	21	784	88	9
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	130	27	5	196	22	2
Total Analysis Volume [veh/h]	519	107	21	784	88	9
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.02	0.01	0.38	0.01
d_M, Delay for Movement [s/veh]	0.00	0.00	8.87	0.00	29.89	10.34
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.07	0.00	1.79	0.04
95th-Percentile Queue Length [ft/ln]	0.00	0.00	1.69	0.00	44.66	1.00
d_A, Approach Delay [s/veh]	0.00		0.23		28.07	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	1.90					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.505

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	561	77	126	474	57	138
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	47	0	0	51	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	630	80	131	544	59	144
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	158	20	33	136	15	36
Total Analysis Volume [veh/h]	630	80	131	544	59	144
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.22	0.22	0.08	0.17	0.04	0.09
Intersection LOS	A					
Intersection V/C	0.505					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.887

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	89	314	511	0	498	357	422	913	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	141	0	2	0	12	5	62	5	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	234	327	533	0	530	376	501	955	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	59	82	133	0	133	94	125	239	0
Total Analysis Volume [veh/h]	0	0	0	234	327	533	0	530	376	501	955	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.15	0.23	0.23	0.00	0.17	0.24	0.31	0.30	0.00
Intersection LOS	D											
Intersection V/C	0.887											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.055

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	384	453	207	0	0	0	311	380	0	0	899	155
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	2	72	115	0	0	0	50	103	0	0	65	45
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	401	543	330	0	0	0	373	498	0	0	1000	206
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	100	136	83	0	0	0	93	125	0	0	250	52
Total Analysis Volume [veh/h]	401	543	330	0	0	0	373	498	0	0	1000	206
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.25	0.40	0.40	0.00	0.00	0.00	0.23	0.16	0.00	0.00	0.31	0.13
Intersection LOS	F											
Intersection V/C	1.055											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.589

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	78	18	0	23	0	23	54	542	0	0	958	191
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	48	0	0	21	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	81	19	0	23	0	24	56	590	0	0	979	191
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	20	5	0	6	0	6	14	148	0	0	245	48
Total Analysis Volume [veh/h]	81	19	0	23	0	24	56	590	0	0	979	191
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.05	0.06	0.00	0.01	0.00	0.02	0.04	0.18	0.00	0.00	0.37	0.37
Intersection LOS	A											
Intersection V/C	0.589											

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\F+P AM.pdf

Scenario 9 Future with Project AM
1/22/2020

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	301	149	450	16.63
9: Zone 1				1.000	0.000	50.00	50.00	236	66	302	11.16
10: Zone 2				1.000	0.000	50.00	50.00	606	136	742	27.42
11: Zone 5				1.000	0.000	50.00	50.00	1006	168	1174	43.39
12: Zone 4: El Monte Projects				1.000	0.000	50.00	50.00	8	20	28	1.03
14: Zone 3: Baldwin Park				1.000	0.000	50.00	50.00	2	8	10	0.37
					Added Trips Total			**2159**	**547**	**2706**	**100.00**

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\F+P PM.pdf

Scenario 10 Future with Project PM
1/22/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Arrow Highway and I-605 SB off-ramps	Signalized	ICU 1	EB Thru	0.764	-	C
2	Arrow Highway and I-605 NB On-ramp	Two-way stop	HCM 6th Edition	EB Thru	0.015	0.0	A
3	Rivergrade Rd and Arrow Hwy	Signalized	ICU 1	SB Thru	0.661	-	B
4	Rivergrade Rd and Stewart Avenue	Signalized	ICU 1	WB Left	0.379	-	A
5	Live Oak Avenue and I-605 SB On-ramp	Signalized	ICU 1	EB Right	1.639	-	F
6	Live Oak Ave and I-605 NB Off-ramp	Two-way stop	HCM 6th Edition	SB Right	1.604	1,119.2	F
7	Live Oak Avenue and Graham Access Road	Signalized	ICU 1	EB Thru	0.700	-	B
8	Rivergrade Rd and Live Oak Ave	Signalized	ICU 1	EB Thru	1.006	-	F
9	Rivergrade Road and Commerce Drive	Two-way stop	HCM 6th Edition	WB Left	0.511	34.6	D
10	Rivergrade Road and Brooks Drive	Signalized	ICU 1	NB Thru	0.407	-	A
11	I-605 SB Ramps/Los Angeles Street	Signalized	ICU 1	EB Thru	0.920	-	E
12	I-605 NB ramps/Los Angeles St	Signalized	ICU 1	NB Thru	1.032	-	F
13	Littlejohn St and Los Angeles St	Signalized	ICU 1	EB Thru	0.755	-	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Arrow Highway and I-605 SB off-ramps

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.764

Intersection Setup

Name			Arrow Hwy		Arrow Hwy	
Approach	Southbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	11.80	12.00
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Arrow Hwy		Arrow Hwy	
Base Volume Input [veh/h]	269	347	0	1400	477	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	21	93	0	316	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	301	454	0	1772	510	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	75	114	0	443	128	0
Total Analysis Volume [veh/h]	301	454	0	1772	510	0
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	7	0	0	6	2	0
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.19	0.28	0.00	0.37	0.16	0.00
Intersection LOS	C					
Intersection V/C	0.764					

Intersection Level Of Service Report
Intersection 2: Arrow Highway and I-605 NB On-ramp

Control Type:	Two-way stop	Delay (sec / veh):	0.0
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.015

Intersection Setup

Name							Arrow Hwy			Arrow Hwy		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	11.00	13.70	12.00	11.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	1
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	175.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name							Arrow Hwy			Arrow Hwy		
Base Volume Input [veh/h]	0	0	0	0	0	0	0	1382	140	0	441	256
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	25	312	0	14	40
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	0	0	0	0	1462	458	0	473	306
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	0	0	0	0	366	115	0	118	77
Total Analysis Volume [veh/h]	0	0	0	0	0	0	0	1462	458	0	473	306
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance				
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS								A	A		A	A
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	0.00			0.00			0.00			0.00		
Approach LOS	A			A			A			A		
d_I, Intersection Delay [s/veh]	0.00											
Intersection LOS	A											

Intersection Level Of Service Report
Intersection 3: Rivergrade Rd and Arrow Hwy

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.661

Intersection Setup

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Approach	Northbound		Southbound		Eastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	9.50	15.00	10.00	12.00	12.00	13.00
No. of Lanes in Pocket	1	0	0	1	1	0
Pocket Length [ft]	119.50	100.00	100.00	190.00	100.00	100.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Arrow Hwy		Arrow Hwy		Rivergrade Road	
Base Volume Input [veh/h]	46	491	1326	225	225	27
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	3	14	4	21	40	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	51	525	1383	255	274	28
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	13	131	346	64	69	7
Total Analysis Volume [veh/h]	51	525	1383	255	274	28
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	8	4	0	1	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.03	0.16	0.43	0.16	0.09	0.02
Intersection LOS	B					
Intersection V/C	0.661					

Intersection Level Of Service Report
Intersection 4: Rivergrade Rd and Stewart Avenue

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.379

Intersection Setup

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.50	11.50	11.50	13.00	13.00	13.00	12.00	13.00	15.00	12.00	13.00	14.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	171.00	100.00	100.00	64.00	100.00	100.00
Speed [mph]	30.00			25.00			40.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Stewart Ave			Stewart Ave			Rivergrade Road			Rivergrade Road		
Base Volume Input [veh/h]	5	4	71	21	14	25	21	164	45	192	64	16
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	40	0	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	5	4	74	22	15	26	22	211	47	200	91	17
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1	1	19	6	4	7	6	53	12	50	23	4
Total Analysis Volume [veh/h]	5	4	74	22	15	26	22	211	47	200	91	17
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	4	0	0	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.05	0.05	0.01	0.02	0.02	0.01	0.08	0.08	0.13	0.03	0.03
Intersection LOS	A											
Intersection V/C	0.379											

Intersection Level Of Service Report
Intersection 5: Live Oak Avenue and I-605 SB On-ramp

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.639

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	11.00	15.00	11.50	13.00
No. of Lanes in Pocket	0	0	0	0	1	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	375.00	100.00
Speed [mph]	30.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		No		No	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	0	0	1038	1274	545	996
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	4	430	122	143
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	1084	1755	689	1179
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	271	439	172	295
Total Analysis Volume [veh/h]	0	0	1084	1755	689	1179
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	0	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.34	1.10	0.43	0.37
Intersection LOS	F					
Intersection V/C	1.639					

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	1,119.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.604

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	20	0	0	129	0	4	0	0	136	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1133	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	177	0	0	187	0	271	0	0	283	0
Total Analysis Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1133	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	1.45	0.00	0.00	1.60	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	853.72	0.00	0.00	1119.23	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	119.20	0.00	0.00	148.52	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2980.01	0.00	0.00	3713.05	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	853.72			1119.23			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	392.65											
Intersection LOS	F											

Intersection Level Of Service Report
Intersection 7: Live Oak Avenue and Graham Access Road

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	B
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.700

Intersection Setup

Name			Live Oak Ave		Live Oak Ave	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	13.00	10.00	12.00	13.50
No. of Lanes in Pocket	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name			Live Oak Ave		Live Oak Ave	
Base Volume Input [veh/h]	22	14	1675	22	9	937
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	24	0	0	136
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	23	15	1766	23	9	1110
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	6	4	442	6	2	278
Total Analysis Volume [veh/h]	23	15	1766	23	9	1110
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	8	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lead	-	-	-	Lead	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.02	0.56	0.56	0.01	0.35
Intersection LOS	B					
Intersection V/C	0.700					

Intersection Level Of Service Report
Intersection 8: Rivergrade Rd and Live Oak Ave

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.006

Intersection Setup

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	12.00	12.00	12.50	12.00	13.50	10.50	13.50	19.00	11.00	11.00	10.00
No. of Lanes in Pocket	1	0	0	1	0	1	1	0	0	1	0	1
Pocket Length [ft]	319.00	100.00	100.00	156.00	100.00	160.00	214.00	100.00	100.00	155.00	100.00	112.00
Speed [mph]	50.00			40.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	Rivergrade Road			Rivergrade Road			Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	164	156	552	24	29	78	42	1568	28	109	663	29
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	40	40	5	0	24	0	0	24	0	0	96	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	202	579	25	54	81	44	1655	29	113	786	30
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	51	145	6	14	20	11	414	7	28	197	8
Total Analysis Volume [veh/h]	211	202	579	25	54	81	44	1655	29	113	786	30
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	3	8	5	7	4	0	1	6	0	5	2	0
Auxiliary Signal Groups			5,8									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lag	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.13	0.13	0.29	0.02	0.02	0.05	0.03	0.52	0.02	0.07	0.25	0.02
Intersection LOS	F											
Intersection V/C	1.006											

Intersection Level Of Service Report
Intersection 9: Rivergrade Road and Commerce Drive

Control Type:	Two-way stop	Delay (sec / veh):	34.6
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.511

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.50	13.00	12.00	12.00
No. of Lanes in Pocket	0	0	1	0	0	1
Pocket Length [ft]	100.00	100.00	185.00	100.00	100.00	250.00
Speed [mph]	45.00		45.00		40.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Commerce Drive	
Base Volume Input [veh/h]	715	27	5	214	121	53
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	85	0	0	24	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	829	28	5	247	126	55
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	207	7	1	62	32	14
Total Analysis Volume [veh/h]	829	28	5	247	126	55
Pedestrian Volume [ped/h]	0		0		0	

Intersection Settings

Priority Scheme	Free	Free	Stop
Flared Lane			
Storage Area [veh]	0	0	0
Two-Stage Gap Acceptance			No
Number of Storage Spaces in Median	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.01	0.00	0.01	0.00	0.51	0.10
d_M, Delay for Movement [s/veh]	0.00	0.00	9.65	0.00	34.57	11.93
Movement LOS	A	A	A	A	D	B
95th-Percentile Queue Length [veh/ln]	0.00	0.00	0.02	0.00	2.98	0.32
95th-Percentile Queue Length [ft/ln]	0.00	0.00	0.48	0.00	74.61	7.93
d_A, Approach Delay [s/veh]	0.00		0.19		27.69	
Approach LOS	A		A		D	
d_I, Intersection Delay [s/veh]	3.92					
Intersection LOS	D					

Intersection Level Of Service Report
Intersection 10: Rivergrade Road and Brooks Drive

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	A
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.407

Intersection Setup

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	14.00	14.00	10.00	13.00	11.50	12.00
No. of Lanes in Pocket	0	0	1	0	1	0
Pocket Length [ft]	100.00	100.00	180.00	100.00	64.00	100.00
Speed [mph]	45.00		45.00		25.00	
Grade [%]	0.00		0.00		0.00	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Rivergrade Road		Rivergrade Road		Brooks Drive	
Base Volume Input [veh/h]	459	12	81	386	78	98
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0400	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	85	0	0	24	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	562	12	84	425	81	102
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	141	3	21	106	20	26
Total Analysis Volume [veh/h]	562	12	84	425	81	102
Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	8	0	5	4	2	0
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.18	0.18	0.05	0.13	0.05	0.06
Intersection LOS	A					
Intersection V/C	0.407					

Intersection Level Of Service Report
Intersection 11: I-605 SB Ramps/Los Angeles Street

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	E
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.920

Intersection Setup

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	13.00	20.00	11.00	13.00	13.00
No. of Lanes in Pocket	0	0	0	0	0	1	0	0	0	1	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	164.00	100.00	100.00	100.00	230.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			Yes			Yes		

Volumes

Name	I-605 SB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	0	0	0	135	324	286	0	1185	501	255	716	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400	1.0400	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	66	0	6	0	8	4	127	12	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	0	206	337	303	0	1240	525	392	757	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	0	52	84	76	0	310	131	98	189	0
Total Analysis Volume [veh/h]	0	0	0	206	337	303	0	1240	525	392	757	0
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	0	0	0	0	4	0	0	6	0	5	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	-	-	-	Lead	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.13	0.18	0.18	0.00	0.39	0.33	0.25	0.24	0.00
Intersection LOS	E											
Intersection V/C	0.920											

Intersection Level Of Service Report
Intersection 12: I-605 NB ramps/Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.032

Intersection Setup

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	11.00	12.00	12.00	12.00	10.50	13.00	13.00	12.00	12.00	25.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	250.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			No			No			No		

Volumes

Name	I-605 NB ramp						Los Angeles St			Los Angeles St		
Base Volume Input [veh/h]	501	300	738	0	0	0	280	1030	0	0	477	63
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0400	1.0000	1.0400	1.0400
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	6	34	46	0	0	0	25	49	0	0	133	80
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	527	346	814	0	0	0	316	1120	0	0	629	146
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	132	87	204	0	0	0	79	280	0	0	157	37
Total Analysis Volume [veh/h]	527	346	814	0	0	0	316	1120	0	0	629	146
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	0	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	-	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.33	0.53	0.53	0.00	0.00	0.00	0.20	0.35	0.00	0.00	0.20	0.09
Intersection LOS	F											
Intersection V/C	1.032											

Intersection Level Of Service Report
Intersection 13: Littlejohn St and Los Angeles St

Control Type:	Signalized	Delay (sec / veh):	-
Analysis Method:	ICU 1	Level Of Service:	C
Analysis Period:	1 hour	Volume to Capacity (v/c):	0.755

Intersection Setup

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	11.00	11.00	11.00	11.00	12.00	12.00	12.00	13.00	12.00	12.00	12.00	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	1	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	80.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	25.00			40.00			45.00			40.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			Yes		

Volumes

Name				Littlejohn St			Los Angeles Street			Los Angeles Street		
Base Volume Input [veh/h]	1	0	3	146	0	74	22	1738	0	0	477	15
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0400	1.0400	1.0000	1.0000	1.0000	1.0400	1.0400	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	21	0	0	44	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1	0	3	146	0	77	23	1759	0	0	521	15
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	1	37	0	19	6	440	0	0	130	4
Total Analysis Volume [veh/h]	1	0	3	146	0	77	23	1759	0	0	521	15
Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Cycle Length [s]	90
Lost time [s]	10.00

Phasing & Timing

Control Type	Permiss	Permiss	Permiss	Permiss	Permiss	Permiss	Protecte	Permiss	Permiss	Permiss	Permiss	Permiss
Signal Group	0	8	0	7	0	0	1	6	0	0	2	0
Auxiliary Signal Groups												
Lead / Lag	-	-	-	Lead	-	-	Lead	-	-	-	-	-

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.00	0.09	0.00	0.05	0.01	0.55	0.00	0.00	0.17	0.17
Intersection LOS	C											
Intersection V/C	0.755											

JB 81279 1331 Los Angeles St TIS

Vistro File: J:\...\Vistro_ICU v2.vistro
Report File: J:\...\F+P PM.pdf

Scenario 10 Future with Project PM
1/22/2020

Trip Generation summary

Added Trips

Zone ID: Name	Land Use variables	Code	Ind. Var.	Rate	Quantity	% In	% Out	Trips In	Trips Out	Total Trips	% of Total Trips
1: Zone				1.000	0.000	50.00	50.00	140	266	406	14.18
9: Zone 1				1.000	0.000	50.00	50.00	105	271	376	13.13
10: Zone 2				1.000	0.000	50.00	50.00	136	544	680	23.74
11: Zone 5				1.000	0.000	50.00	50.00	310	1041	1351	47.17
12: Zone 4: El Monte Projects				1.000	0.000	50.00	50.00	24	14	38	1.33
14: Zone 3: Baldwin Park				1.000	0.000	50.00	50.00	8	5	13	0.45
					Added Trips Total			**723**	**2141**	**2864**	**100.00**

APPENDIX G1
Freeway Existing LOS Worksheets, Interstate 10 segments

HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8884	Heavy Vehicle Adjustment Factor (f_{HV})	0.939
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2516
Total Trucks, %	6.45	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.07
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8578	Heavy Vehicle Adjustment Factor (f_{HV})	0.939
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2430
Total Trucks, %	6.45	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.03
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9404	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2069
Total Trucks, %	3.37	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9080	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1998
Total Trucks, %	3.37	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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APPENDIX G2
Freeway Existing LOS Worksheets, Interstate 210 segments

HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2018
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	9016	Heavy Vehicle Adjustment Factor (f_{HV})	0.928
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2067
Total Trucks, %	7.80	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	35.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Buffer 1	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1704
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1704
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	600	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2018
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	9145	Heavy Vehicle Adjustment Factor (f_{HV})	0.928
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2097
Total Trucks, %	7.80	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	36.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Continuous Access	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1804
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1804
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	500	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	9474	Heavy Vehicle Adjustment Factor (f_{HV})	0.934
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2158
Total Trucks, %	7.06	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	37.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Buffer 1	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1704
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1704
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	600	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	9609	Heavy Vehicle Adjustment Factor (f_{HV})	0.934
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2189
Total Trucks, %	7.06	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	39.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Buffer 1	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1704
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1704
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	600	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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APPENDIX G3
Freeway Existing LOS Worksheets, Interstate 605 Ramps and Segments

HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Off to Lower Azusa/LA Street_605, Ramona to Azusa/LA Street
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	350	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6889	453
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	10.00	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.909	0.800
Flow Rate (v_i),pc/h	7579	566
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.81	0.28

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.479
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1978
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.5
Flow in Lanes 1 and 2 (v_{12}), pc/h	3624	Ramp Junction Speed (S), mi/h	60.3

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	31.4
Level of Service (LOS)	E	Density in Ramp Influence Area (D_R), pc/mi/ln	35.4

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Off to Lower Azusa/LA Street_605, Ramona to Azusa/LA Street
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	350	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6616	435
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	10.00	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.909	0.800
Flow Rate (v_i),pc/h	7278	544
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.77	0.27

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.477
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1899
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.8
Flow in Lanes 1 and 2 (v_{12}), pc/h	3480	Ramp Junction Speed (S), mi/h	60.4

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	30.1
Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	34.2

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	On from Lower Azusa/LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	610	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6436	138
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	6980	150
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.76	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.395
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2094
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	59.3
Flow in Lanes 1 and 2 (v_{12}), pc/h	2792	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2942	Average Density (D), pc/mi/ln	30.8

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.4

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	On from Lower Azusa/LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	610	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6181	133
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	6704	144
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.73	0.07

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.387
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2011
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	59.6
Flow in Lanes 1 and 2 (v_{12}), pc/h	2682	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2826	Average Density (D), pc/mi/ln	29.5

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.5

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Live Oak Off-ramp, NB_605, LA/ Lower Azusa St to Live Oak
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	200	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6382	280
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.800
Flow Rate (v_i),pc/h	6922	350
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.74	0.18

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.460
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1854
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	68.0
Flow in Lanes 1 and 2 (v_{12}), pc/h	3215	Ramp Junction Speed (S), mi/h	60.9

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	28.4
Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	31.9

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Live Oak Off-ramp, NB_605, LA/ Lower Azusa St to Live Oak
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	200	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6128	269
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.800
Flow Rate (v_i),pc/h	6646	336
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.71	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.458
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1780
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	68.3
Flow in Lanes 1 and 2 (v_{12}), pc/h	3087	Ramp Junction Speed (S), mi/h	61.1

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	27.2
Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	30.8

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	2	Segment Name	Arrow Highway EB On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	710	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5294	95
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.50	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.930	0.935
Flow Rate (v_i),pc/h	5692	102
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.62	0.05

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.363
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1708
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.7
Flow in Lanes 1 and 2 (v_{12}), pc/h	2277	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2379	Average Density (D), pc/mi/ln	24.6

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	24.1

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	2	Segment Name	Arrow Highway EB On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	710	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5084	91
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.50	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.930	0.935
Flow Rate (v_i),pc/h	5467	97
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.59	0.05

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.359
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1640
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	2187	Ramp Junction Speed (S), mi/h	59.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2284	Average Density (D), pc/mi/ln	23.5

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	23.3

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	4	Segment Name	Arrow Highway WB On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	520	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5389	141
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.25	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.932	0.935
Flow Rate (v_i),pc/h	5782	151
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.63	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.367
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1735
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.6
Flow in Lanes 1 and 2 (v_{12}), pc/h	2313	Ramp Junction Speed (S), mi/h	58.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2464	Average Density (D), pc/mi/ln	25.2

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	24.7

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	4	Segment Name	Arrow Highway WB On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	520	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5175	136
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.25	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.932	0.935
Flow Rate (v_i),pc/h	5553	145
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.61	0.07

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.363
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1666
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.8
Flow in Lanes 1 and 2 (v_{12}), pc/h	2221	Ramp Junction Speed (S), mi/h	59.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2366	Average Density (D), pc/mi/ln	24.1

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	23.9

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2019
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to Arrow Hwy
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	5802	279
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.971
Flow Rate (vi),pc/h	6205	287
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.66	0.14

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.454
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1669
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	68.7
Flow in Lanes 1 and 2 (v12), pc/h	2867	Ramp Junction Speed (S), mi/h	61.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	25.3

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	28.9

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2019
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to Arrow Hwy
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	5571	268
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.971
Flow Rate (vi),pc/h	5958	276
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.63	0.14

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.453
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1603
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.6
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	69.0
Flow in Lanes 1 and 2 (v12), pc/h	2753	Ramp Junction Speed (S), mi/h	61.5
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	24.2

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.9

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB on from Live Oak
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	740	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5294	593
Peak Hour Factor (PHF)	0.94	0.94
Total Trucks, %	7.20	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.933	0.909
Flow Rate (v_i),pc/h	6036	694
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.72	0.35

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.408
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1811
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.3
Flow in Lanes 1 and 2 (v_{12}), pc/h	2414	Ramp Junction Speed (S), mi/h	58.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3108	Average Density (D), pc/mi/ln	29.0

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	29.5

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB on from Live Oak
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	740	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5084	570
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.20	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.933	0.909
Flow Rate (v_i),pc/h	5449	627
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.65	0.31

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.386
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1635
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	2180	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2807	Average Density (D), pc/mi/ln	25.9

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.2

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	240	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6382	301
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	6922	326
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.74	0.16

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.457
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1860
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	68.0
Flow in Lanes 1 and 2 (v_{12}), pc/h	3202	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	28.4

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	31.8

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	240	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6128	289
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	6646	313
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.71	0.16

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.456
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1786
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	68.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	3074	Ramp Junction Speed (S), mi/h	61.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	27.2

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	30.7

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	SB on from LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	853	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6081	449
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.870
Flow Rate (v_i),pc/h	6595	516
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.76	0.26

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.412
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1979
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	59.7
Flow in Lanes 1 and 2 (v_{12}), pc/h	2638	Ramp Junction Speed (S), mi/h	57.8
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3154	Average Density (D), pc/mi/ln	30.8

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	29.9

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	SB on from LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	853	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5839	431
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.870
Flow Rate (v_i),pc/h	6333	495
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.73	0.25

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.402
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1900
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.0
Flow in Lanes 1 and 2 (v_{12}), pc/h	2533	Ramp Junction Speed (S), mi/h	58.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3028	Average Density (D), pc/mi/ln	29.4

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	28.9

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2019
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 n/o arrow highway
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5802	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1551
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.2
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2019
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 n/o arrow highway
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5571	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1490
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.2
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o arrow highway
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5294	Heavy Vehicle Adjustment Factor (f_{HV})	0.933
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1509
Total Trucks, %	7.20	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.5
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o arrow highway
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5084	Heavy Vehicle Adjustment Factor (f_{HV})	0.933
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1362
Total Trucks, %	7.20	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.2
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o Live Oak
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3750	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6382	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1730
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.7
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o Live Oak
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3750	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6128	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1662
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.4
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2193	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6889	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.8
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2193	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6616	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1820
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, Ramona to Azusa/LA Street
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2700	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6889	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1895
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.2
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, Ramona to Azusa/LA Street
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2700	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6616	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1820
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.5
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, LA/Lower Azusa St to Live Oak
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3096	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6382	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1730
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.5
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, LA/Lower Azusa St to Live Oak
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3096	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6128	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1662
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.71
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	26.2
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	1	Segment Name	605 NB Graham Access Road to Arrow Highway On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3532	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5294	Heavy Vehicle Adjustment Factor (f_{HV})	0.930
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1423
Total Trucks, %	7.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.61
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.3
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	1	Segment Name	605 NB Graham Access Road to Arrow Highway On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3532	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5084	Heavy Vehicle Adjustment Factor (f_{HV})	0.930
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1367
Total Trucks, %	7.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.58
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	21.5
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	
Project Description	13131 Los Angeles Street Industrial EIR-North of Arrow HIghway		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5802	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1650
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2017
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR-North of Arrow HIghway		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5571	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1585
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.67
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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APPENDIX H1
Freeway Future without Project LOS Worksheets, Interstate 10 Segments

HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9549	Heavy Vehicle Adjustment Factor (f_{HV})	0.939
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2704
Total Trucks, %	6.45	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.15
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9225	Heavy Vehicle Adjustment Factor (f_{HV})	0.939
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2613
Total Trucks, %	6.45	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.11
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10101	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2222
Total Trucks, %	3.37	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9758	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2147
Total Trucks, %	3.37	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.91
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.6
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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APPENDIX H2
Freeway Future without Project LOS Worksheets, Interstate 210 Segments

HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	9690	Heavy Vehicle Adjustment Factor (f_{HV})	0.928
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2222
Total Trucks, %	7.80	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	40.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Continuous Access	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1804
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1804
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	500	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	9831	Heavy Vehicle Adjustment Factor (f_{HV})	0.928
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2254
Total Trucks, %	7.80	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	41.2
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Continuous Access	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1804
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1804
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	500	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	10236	Heavy Vehicle Adjustment Factor (f_{HV})	0.934
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2332
Total Trucks, %	7.06	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	44.3
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Buffer 1	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1704
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1704
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	600	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

General Purpose Geometric Data

Number of General Purpose Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

General Purpose Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

General Purpose Demand and Capacity

Demand Volume veh/h	10387	Heavy Vehicle Adjustment Factor (f_{HV})	0.934
Peak Hour Factor	0.94	Flow Rate ($V_{p,GP}$), pc/h/ln	2366
Total Trucks, %	7.06	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.01
Passenger Car Equivalent (E_T)	2.000		

General Purpose Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D_{GP}), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Managed Lane Geometric Data

Managed Lane Type	Buffer 1	Free-Flow Speed (FFS), mi/h	75.4
Number of Managed Lanes, ln	1	Terrain Type	Level
Managed Lane Length, ft	5280	Percent Grade, %	-

Managed Lane Adjustment Factors

Driver Population	All Familiar	Driver Population CAF	1.000
Weather Type	Non-Severe Weather	Weather Type CAF	1.000
Driver Population SAF	1.000	Final Speed Adjustment Factor (SAF)	1.000
Weather Type SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000

Demand Adjustment Factor (DAF)	1.000		
Managed Lane Demand and Capacity			
Volume (V_{ML}), veh/h	0	Heavy Vehicle Adjustment Factor (f_{HV})	1.000
Peak Hour Factor	0.94	Flow Rate ($V_{p,ML}$), pc/h/ln	0
Total Trucks, %	0.00	Capacity (c), pc/h/ln	1704
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	1704
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.00
Passenger Car Equivalent (E_T)	2.000		
Managed Lane Speed and Density			
Breakpoint (BP_{ML})	600	Indicator Variable (I_c)	-
Speed 1 (S_1), mi/h	75.4	Average Speed (S_{ML}), mi/h	75.4
Speed 2 (S_2), mi/h	-	Density (D_{ML}), pc/mi/ln	0.0
Speed 3 (S_3), mi/h	-	Level of Service (LOS)	A

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APPENDIX H3
Freeway Future without Project LOS Worksheets, Interstate 605 Ramps and Segments

HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Off to Lower Azusa/LA Street_605, Ramona to Azusa/LA Street
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	350	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7861	526
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	10.00	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.909	0.800
Flow Rate (v_i),pc/h	8648	658
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.92	0.33

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.487
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2253
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	66.4
Flow in Lanes 1 and 2 (v_{12}), pc/h	4142	Ramp Junction Speed (S), mi/h	59.7

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	36.2
Level of Service (LOS)	E	Density in Ramp Influence Area (D_R), pc/mi/ln	39.9

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Off to Lower Azusa/LA Street_605, Ramona to Azusa/LA Street
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	350	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7188	480
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	10.00	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.909	0.800
Flow Rate (v_i),pc/h	7908	600
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.84	0.30

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.482
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2061
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	53.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	3786	Ramp Junction Speed (S), mi/h	60.1

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	32.9
Level of Service (LOS)	E	Density in Ramp Influence Area (D_R), pc/mi/ln	36.8

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	On from Lower Azusa/LA St
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	610	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7335	151
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7956	164
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.86	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.432
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2387
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	57.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	3182	Ramp Junction Speed (S), mi/h	56.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3346	Average Density (D), pc/mi/ln	35.8

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	31.6

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	On from Lower Azusa/LA St
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	610	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6708	145
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7275	157
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.79	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.405
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2183
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	58.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	2910	Ramp Junction Speed (S), mi/h	57.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3067	Average Density (D), pc/mi/ln	32.3

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	29.4

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Live Oak Off-ramp, NB_605, LA/ Lower Azusa St to Live Oak
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	200	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7283	802
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.800
Flow Rate (v_i),pc/h	7899	1002
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.84	0.50

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.518
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1945
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	53.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.6
Flow in Lanes 1 and 2 (v_{12}), pc/h	4009	Ramp Junction Speed (S), mi/h	59.4

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.2
Level of Service (LOS)	E	Density in Ramp Influence Area (D_R), pc/mi/ln	38.7

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Live Oak Off-ramp, NB_605, LA/ Lower Azusa St to Live Oak
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	200	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6656	434
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.800
Flow Rate (v_i),pc/h	7219	542
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.77	0.27

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.477
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1883
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	3453	Ramp Junction Speed (S), mi/h	60.5

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	29.8
Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	33.9

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	2	Segment Name	Arrow Highway EB On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	710	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5623	151
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.50	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.930	0.935
Flow Rate (v_i),pc/h	6046	161
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.66	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.372
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1814
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.3
Flow in Lanes 1 and 2 (v_{12}), pc/h	2418	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2579	Average Density (D), pc/mi/ln	26.5

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.6

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	2	Segment Name	Arrow Highway EB On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	710	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5399	409
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.50	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.930	0.935
Flow Rate (v_i),pc/h	5805	437
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.66	0.22

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.383
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1742
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.5
Flow in Lanes 1 and 2 (v_{12}), pc/h	2322	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2759	Average Density (D), pc/mi/ln	26.7

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.9

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	4	Segment Name	Arrow Highway WB On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	520	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5774	150
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.25	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.932	0.935
Flow Rate (v_i),pc/h	6195	160
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.68	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.376
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1859
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	2478	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2638	Average Density (D), pc/mi/ln	27.2

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.1

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	4	Segment Name	Arrow Highway WB On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	520	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5808	144
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.25	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.932	0.935
Flow Rate (v_i),pc/h	6232	154
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.68	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.376
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1870
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	2493	Ramp Junction Speed (S), mi/h	58.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2647	Average Density (D), pc/mi/ln	27.3

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.1

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to Arrow Hwy
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	6461	598
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.971
Flow Rate (vi),pc/h	6910	616
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.74	0.31

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.483
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1775
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	53.9
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	68.3
Flow in Lanes 1 and 2 (v12), pc/h	3360	Ramp Junction Speed (S), mi/h	60.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	28.6

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	33.1

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to Arrow Hwy
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6011	377
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.935	0.971
Flow Rate (v_i),pc/h	6429	388
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.68	0.19

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.463
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1704
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	68.6
Flow in Lanes 1 and 2 (v_{12}), pc/h	3022	Ramp Junction Speed (S), mi/h	61.1
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	26.3

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.2

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB on from Live Oak
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	740	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5620	719
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.20	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.933	0.909
Flow Rate (v_i),pc/h	6024	791
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.72	0.40

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.417
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1807
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.3
Flow in Lanes 1 and 2 (v_{12}), pc/h	2410	Ramp Junction Speed (S), mi/h	57.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3201	Average Density (D), pc/mi/ln	29.4

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	30.2

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB on from Live Oak
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	740	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5401	1117
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.20	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.933	0.909
Flow Rate (v_i),pc/h	5789	1229
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.75	0.61

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.456
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1737
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	54.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.5
Flow in Lanes 1 and 2 (v_{12}), pc/h	2316	Ramp Junction Speed (S), mi/h	57.3
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3545	Average Density (D), pc/mi/ln	30.6

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	32.6

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	240	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6865	321
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7446	348
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.79	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.459
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2002
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.4
Flow in Lanes 1 and 2 (v_{12}), pc/h	3443	Ramp Junction Speed (S), mi/h	60.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	30.7

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	33.9

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	240	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7021	313
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7615	339
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.81	0.17

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.459
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2052
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	3511	Ramp Junction Speed (S), mi/h	60.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	31.4

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	34.4

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	SB on from LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	853	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6544	493
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.870
Flow Rate (v_i),pc/h	7098	567
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.82	0.28

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.439
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2130
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	54.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	59.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	2839	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3406	Average Density (D), pc/mi/ln	33.5

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	31.9

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	SB on from LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	853	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6708	500
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.870
Flow Rate (v_i),pc/h	7275	575
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.84	0.29

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.448
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2183
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	58.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	2910	Ramp Junction Speed (S), mi/h	57.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3485	Average Density (D), pc/mi/ln	34.4

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	32.5

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 n/o arrow highway
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6461	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1728
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.74
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	27.4
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 n/o arrow highway
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6011	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1607
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.69
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.2
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o arrow highway
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5620	Heavy Vehicle Adjustment Factor (f_{HV})	0.933
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1506
Total Trucks, %	7.20	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.64
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.5
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o arrow highway
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5401	Heavy Vehicle Adjustment Factor (f_{HV})	0.933
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1447
Total Trucks, %	7.20	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.5
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 SB back of Live Oak/ ahead of LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3750	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6865	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1862
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.80
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	30.4
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 SB back of Live Oak/ ahead of LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3750	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7021	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1904
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.81
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.4
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2193	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7418	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	2040
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	34.5
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2193	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7576	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	2084
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.89
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.4
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, Ahead of Ramona/ Back of LA Street
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2700	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7861	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	2162
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.93
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	38.5
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, Ahead of Ramona/ Back of LA Street
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2700	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7188	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1977
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.2
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, LA/Lower Azusa St to Live Oak
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3096	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7283	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1975
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.84
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.0
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, LA/Lower Azusa St to Live Oak
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3096	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6656	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1805
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.0
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	1	Segment Name	605 Ahead of Live Oak off-ramp to Arrow Highway On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3532	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5623	Heavy Vehicle Adjustment Factor (f_{HV})	0.930
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1512
Total Trucks, %	7.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.65
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.8
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	1	Segment Name	605 Ahead of Live Oak off-ramp to Arrow Highway On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3532	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5399	Heavy Vehicle Adjustment Factor (f_{HV})	0.930
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1451
Total Trucks, %	7.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.62
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.8
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR-North of Arrow Highway		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6212	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1767
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

Design Analysis Table

Number of Lanes, ln	2	3	4	5
Density, pc/mi/ln	-	-	28.0	21.8
LOS	F	F	D	C

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR-North of Arrow Highway		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6228	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1772
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.75
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.0
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.1
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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APPENDIX I1
Freeway Future with Project LOS Worksheets, Interstate 10 Segments

HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10144	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2232
Total Trucks, %	3.37	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.95
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	40.4
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9797	Heavy Vehicle Adjustment Factor (f_{HV})	0.967
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2156
Total Trucks, %	3.37	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.92
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	56.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	37.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9578	Heavy Vehicle Adjustment Factor (f_{HV})	0.939
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2713
Total Trucks, %	6.45	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.15
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-10 Mainline Analysis		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9251	Heavy Vehicle Adjustment Factor (f_{HV})	0.939
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2620
Total Trucks, %	6.45	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.12
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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APPENDIX I2
Freeway Future with Project LOS Worksheets, Interstate 210 Segments

HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9801	Heavy Vehicle Adjustment Factor (f_{HV})	0.928
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2247
Total Trucks, %	7.80	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.96
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	9916	Heavy Vehicle Adjustment Factor (f_{HV})	0.928
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2273
Total Trucks, %	7.80	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.97
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	41.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10311	Heavy Vehicle Adjustment Factor (f_{HV})	0.934
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2349
Total Trucks, %	7.06	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.00
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	52.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	45.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR: 1-210 Mainline Analysis		

Geometric Data

Number of Lanes, ln	5	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	10443	Heavy Vehicle Adjustment Factor (f_{HV})	0.934
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2379
Total Trucks, %	7.06	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.01
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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APPENDIX I3
Freeway Future with Project LOS Worksheets, Interstate 605 Ramps and Segments

HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Off to Lower Azusa/LA Street_605, Ramona to Azusa/LA Street
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	350	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	8005	670
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	10.00	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.909	0.800
Flow Rate (v_i),pc/h	8806	838
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.94	0.42

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.503
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2247
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	53.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	66.4
Flow in Lanes 1 and 2 (v_{12}), pc/h	4312	Ramp Junction Speed (S), mi/h	59.3

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	37.1
Level of Service (LOS)	E	Density in Ramp Influence Area (D_R), pc/mi/ln	41.3

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Off to Lower Azusa/LA Street_605, Ramona to Azusa/LA Street
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	350	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7256	548
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	10.00	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.909	0.800
Flow Rate (v_i),pc/h	7982	685
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.85	0.34

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.490
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2058
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	53.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	3866	Ramp Junction Speed (S), mi/h	59.9

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.3
Level of Service (LOS)	E	Density in Ramp Influence Area (D_R), pc/mi/ln	37.5

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	On from Lower Azusa/LA St
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	610	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7335	241
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7956	261
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.87	0.13

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.443
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2387
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	54.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	57.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	3182	Ramp Junction Speed (S), mi/h	56.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3443	Average Density (D), pc/mi/ln	36.3

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	32.3

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	On from Lower Azusa/LA St
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	610	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6708	246
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7275	267
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.80	0.13

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.415
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2183
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	58.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	2910	Ramp Junction Speed (S), mi/h	57.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3177	Average Density (D), pc/mi/ln	32.8

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.2

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Live Oak Off-ramp, NB_605, LA/ Lower Azusa St to Live Oak
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	200	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7367	802
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.800
Flow Rate (v_i),pc/h	7990	1002
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.85	0.50

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.518
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1971
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	53.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.5
Flow in Lanes 1 and 2 (v_{12}), pc/h	4049	Ramp Junction Speed (S), mi/h	59.3

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	33.7
Level of Service (LOS)	E	Density in Ramp Influence Area (D_R), pc/mi/ln	39.1

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	Live Oak Off-ramp, NB_605, LA/ Lower Azusa St to Live Oak
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	200	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6767	434
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	25.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.800
Flow Rate (v_i),pc/h	7339	542
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.78	0.27

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.477
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1917
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.7
Flow in Lanes 1 and 2 (v_{12}), pc/h	3505	Ramp Junction Speed (S), mi/h	60.4

Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	30.4
Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	34.4

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	2	Segment Name	Arrow Highway EB On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	710	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5707	151
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.50	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.930	0.935
Flow Rate (v_i),pc/h	6137	161
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.67	0.08

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.374
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1841
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	2455	Ramp Junction Speed (S), mi/h	58.6
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2616	Average Density (D), pc/mi/ln	26.9

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	25.9

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	2	Segment Name	Arrow Highway EB On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	710	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	5510	409
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.50	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.930	0.935
Flow Rate (vi),pc/h	5925	437
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.68	0.22

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (MS)	0.386
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1778
Distance to Downstream Ramp (LDOWN), ft	-	On-Ramp Influenece Area Speed (SR), mi/h	56.1
Prop. Freeway Vehicles in Lane 1 and 2 (PFM)	0.000	Outer Lanes Freeway Speed (SO), mi/h	60.4
Flow in Lanes 1 and 2 (v12), pc/h	2370	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (vR12), pc/h	2807	Average Density (D), pc/mi/ln	27.2

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	27.2

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	4	Segment Name	Arrow Highway WB On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	520	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5864	172
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.25	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.932	0.935
Flow Rate (v_i),pc/h	6292	184
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.69	0.09

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.379
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1888
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.0
Flow in Lanes 1 and 2 (v_{12}), pc/h	2517	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2701	Average Density (D), pc/mi/ln	27.7

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.5

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	4	Segment Name	Arrow Highway WB On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	520	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5909	184
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.25	7.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.932	0.935
Flow Rate (v_i),pc/h	6340	197
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.70	0.10

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.381
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1902
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	56.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.0
Flow in Lanes 1 and 2 (v_{12}), pc/h	2536	Ramp Junction Speed (S), mi/h	58.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	2733	Average Density (D), pc/mi/ln	28.0

Level of Service (LOS)	C	Density in Ramp Influence Area (DR), pc/mi/ln	26.8

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to Arrow Hwy
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	6647	643
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.971
Flow Rate (vi),pc/h	7109	662
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.76	0.33

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.488
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1818
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	53.8
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	68.1
Flow in Lanes 1 and 2 (v12), pc/h	3473	Ramp Junction Speed (S), mi/h	60.3
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	29.5

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	34.1

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to Arrow Hwy
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	1500	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (Vi)	6098	398
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.00	3.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (fHV)	0.935	0.971
Flow Rate (vi),pc/h	6522	410
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.69	0.21

Speed and Density

Upstream Equilibrium Distance (LEQ), ft	-	Number of Outer Lanes on Freeway (NO)	2
Distance to Upstream Ramp (LUP), ft	-	Speed Index (DS)	0.465
Downstream Equilibrium Distance (LEQ), ft	-	Flow Outer Lanes (vOA), pc/mi/ln	1724
Distance to Downstream Ramp (LDOWN), ft	-	Off-Ramp Influenece Area Speed (SR), mi/h	54.3
Prop. Freeway Vehicles in Lane 1 and 2 (PFD)	0.436	Outer Lanes Freeway Speed (SO), mi/h	68.5
Flow in Lanes 1 and 2 (v12), pc/h	3075	Ramp Junction Speed (S), mi/h	61.0
Flow Entering Ramp-Infl. Area (vR12), pc/h	-	Average Density (D), pc/mi/ln	26.7

Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	30.7

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB on from Live Oak
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	740	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5761	741
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.20	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.933	0.909
Flow Rate (v_i),pc/h	6175	815
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.74	0.41

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.425
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1853
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	55.2
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	2470	Ramp Junction Speed (S), mi/h	57.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3285	Average Density (D), pc/mi/ln	30.3

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	30.8

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB on from Live Oak
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	740	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	5467	1157
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	7.20	10.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.933	0.909
Flow Rate (v_i),pc/h	5860	1273
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.76	0.64

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.466
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	1758
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	54.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	60.5
Flow in Lanes 1 and 2 (v_{12}), pc/h	2344	Ramp Junction Speed (S), mi/h	57.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3617	Average Density (D), pc/mi/ln	31.2

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	33.2

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	240	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7028	462
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7623	501
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.81	0.25

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.473
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2009
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.4
Flow in Lanes 1 and 2 (v_{12}), pc/h	3606	Ramp Junction Speed (S), mi/h	60.4
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	31.6

Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	35.3

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HCS7 Freeway Diverge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	2	Segment Name	SB off to LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Deceleration Length (LA),ft	240	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	7127	379
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	8.50
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.922
Flow Rate (v_i),pc/h	7730	411
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.82	0.21

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (D_S)	0.465
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2064
Distance to Downstream Ramp (L_{DOWN}), ft	-	Off-Ramp Influenece Area Speed (S_R), mi/h	54.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.436	Outer Lanes Freeway Speed (S_O), mi/h	67.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	3602	Ramp Junction Speed (S), mi/h	60.5
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	31.9

Level of Service (LOS)	E	Density in Ramp Influence Area (DR), pc/mi/ln	35.2

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	SB on from LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	853	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6566	543
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.870
Flow Rate (v_i),pc/h	7121	624
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.82	0.31

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.447
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2137
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	54.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	59.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	2848	Ramp Junction Speed (S), mi/h	57.0
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3472	Average Density (D), pc/mi/ln	34.0

Level of Service (LOS)	D	Density in Ramp Influence Area (DR), pc/mi/ln	32.3

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HCS7 Freeway Merge Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	4	Segment Name	SB on from LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

	Freeway	Ramp
Number of Lanes (N), ln	4	1
Free-Flow Speed (FFS), mi/h	65.0	35.0
Segment Length (L) / Acceleration Length (LA),ft	853	0
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i)	6748	588
Peak Hour Factor (PHF)	1.00	1.00
Total Trucks, %	8.50	15.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.922	0.870
Flow Rate (v_i),pc/h	7319	676
Capacity (c), pc/h	9400	2000
Volume-to-Capacity Ratio (v/c)	0.85	0.34

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Number of Outer Lanes on Freeway (N_O)	2
Distance to Upstream Ramp (L_{UP}), ft	-	Speed Index (M_S)	0.464
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/mi/ln	2196
Distance to Downstream Ramp (L_{DOWN}), ft	-	On-Ramp Influenece Area Speed (S_R), mi/h	54.3
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.000	Outer Lanes Freeway Speed (S_O), mi/h	58.9
Flow in Lanes 1 and 2 (v_{12}), pc/h	2928	Ramp Junction Speed (S), mi/h	56.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3604	Average Density (D), pc/mi/ln	35.3

HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 n/o arrow highway
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6647	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1777
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.76
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.4
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 n/o arrow highway
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6098	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1630
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.70
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	25.6
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o arrow highway
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5761	Heavy Vehicle Adjustment Factor (f_{HV})	0.933
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1544
Total Trucks, %	7.20	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.1
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.1
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o arrow highway
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	4039	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5467	Heavy Vehicle Adjustment Factor (f_{HV})	0.933
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1465
Total Trucks, %	7.20	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	64.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	22.8
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 SB back of Live Oak/ ahead of LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3750	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7028	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1906
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.82
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	31.5
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 SB back of Live Oak/ ahead of LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3750	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7127	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1932
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.83
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	60.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	32.1
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o LA St
Time Period Number	1	Segment Analysis Time Period	07:00-07:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2193	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7490	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	2060
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.88
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	58.8
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	35.0
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	I-605 s/o LA St
Time Period Number	2	Segment Analysis Time Period	07:15-07:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2193	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7704	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	2119
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.90
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	57.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, Ahead of Ramona/ Back of LA Street
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2700	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	8005	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	2202
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.94
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	55.2
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	39.9
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, Ahead of Ramona/ Back of LA Street
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	2700	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7256	Heavy Vehicle Adjustment Factor (f_{HV})	0.909
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1996
Total Trucks, %	10.00	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.7
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, LA/Lower Azusa St to Live Oak
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3096	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7373	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1999
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.85
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	59.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	33.6
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM-1, PM-2
Project Description	13131 Los Angeles Street EIR		
Segment Number	1	Segment Name	605, LA/Lower Azusa St to Live Oak
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3096	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.17
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	64.3
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6757	Heavy Vehicle Adjustment Factor (f_{HV})	0.922
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1832
Total Trucks, %	8.50	Capacity (c), pc/h/ln	2343
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2343
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.78
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	61.9
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	29.6
Total Ramp Density Adjustment	0.7	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	64.3		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	1	Segment Name	605 Ahead of Live Oak off-ramp to Arrow Highway On-ramp
Time Period Number	1	Segment Analysis Time Period	05:00-05:15

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3532	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5713	Heavy Vehicle Adjustment Factor (f_{HV})	0.930
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1536
Total Trucks, %	7.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.66
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	24.2
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Corporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	1-AM, 2-PM
Project Description	13131 Los Angeles Street Industrial EIR		
Segment Number	1	Segment Name	605 Ahead of Live Oak off-ramp to Arrow Highway On-ramp
Time Period Number	2	Segment Analysis Time Period	05:15-05:30

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	3532	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.33
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	63.7
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	5500	Heavy Vehicle Adjustment Factor (f_{HV})	0.930
Peak Hour Factor	1.00	Flow Rate (V_p), pc/h/ln	1478
Total Trucks, %	7.50	Capacity (c), pc/h/ln	2337
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2337
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.63
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	63.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	23.2
Total Ramp Density Adjustment	1.3	Level of Service (LOS)	C
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	63.7		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	AM
Project Description	13131 Los Angeles Street Industrial EIR-North of Arrow HIghway		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6324	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1799
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.7
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.7
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	RML	Date	5/17/2019
Agency	KOA Coporation	Analysis Year	2020
Jurisdiction	Irwindale	Time Period Analyzed	PM
Project Description	13131 Los Angeles Street Industrial EIR-North of Arrow Highway		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	65.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	65.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6369	Heavy Vehicle Adjustment Factor (f_{HV})	0.935
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1812
Total Trucks, %	7.00	Capacity (c), pc/h/ln	2350
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	2350
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.77
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	62.6
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	28.9
Total Ramp Density Adjustment	0.0	Level of Service (LOS)	D
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	65.0		

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Level of Service (LOS)	D	Density in Ramp Influence Area (D_R), pc/mi/ln	33.3

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APPENDIX J
Freeway Off-ramp Queuing Reports

Intersection: 1: Arrow Hwy & I-605 Off-ramp

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	L	R
Maximum Queue (ft)	201	171	48	373	334	636	648
Average Queue (ft)	118	57	11	280	205	288	51
95th Queue (ft)	182	122	37	384	304	482	355
Link Distance (ft)	500	500	500	340	340	917	917
Upstream Blk Time (%)				4	1	0	0
Queuing Penalty (veh)				0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: I-605 nb off-ramp & Live Oak Avenue

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	882	1670
Average Queue (ft)	727	1622
95th Queue (ft)	1072	1769
Link Distance (ft)	827	1614
Upstream Blk Time (%)	65	95
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Los Angeles Street & Rivergrade Sb/605 offramp

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	LT	TR	R
Maximum Queue (ft)	305	246	262	249	253	252	270	304	189
Average Queue (ft)	195	90	46	180	146	168	163	165	121
95th Queue (ft)	284	203	189	256	222	225	247	264	232
Link Distance (ft)	294	294	294		336	336	1273	1273	
Upstream Blk Time (%)	1	0	0		0	0			
Queuing Penalty (veh)	0	0	0		1	0			
Storage Bay Dist (ft)				230					164
Storage Blk Time (%)				2	0			7	1
Queuing Penalty (veh)				12	0			19	4

Intersection: 12: I-605 nb off-ramp/Rivergrade Road Nb & Los Angeles Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	R	LT	TR
Maximum Queue (ft)	274	375	333	454	441	431	366	332
Average Queue (ft)	211	105	58	418	408	310	254	207
95th Queue (ft)	310	327	231	442	452	591	353	309
Link Distance (ft)		336	336	400	400	400	1359	1359
Upstream Blk Time (%)		4	0	85	54	19		
Queuing Penalty (veh)		12	0	0	0	0		
Storage Bay Dist (ft)	250							
Storage Blk Time (%)	22	0						
Queuing Penalty (veh)	43	0						

Network Summary

Network wide Queuing Penalty: 92

Intersection: 1: Arrow Hwy & I-605 Off-ramp

Movement	EB	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	T	L
Maximum Queue (ft)	288	252	198	159	86	271
Average Queue (ft)	169	124	58	76	24	147
95th Queue (ft)	254	218	133	137	63	230
Link Distance (ft)	500	500	500	340	340	917
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: I-605 nb off-ramp & Live Oak Avenue

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	880	1665
Average Queue (ft)	820	1514
95th Queue (ft)	1000	2027
Link Distance (ft)	827	1614
Upstream Blk Time (%)	88	81
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Los Angeles Street & Rivergrade Sb/605 offramp

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	LT	TR	R
Maximum Queue (ft)	331	317	310	231	207	202	355	333	189
Average Queue (ft)	303	230	134	136	105	122	214	193	121
95th Queue (ft)	346	330	347	207	172	186	319	302	237
Link Distance (ft)	294	294	294		336	336	1273	1273	
Upstream Blk Time (%)	23	3	2						
Queuing Penalty (veh)	0	0	0						
Storage Bay Dist (ft)				230					164
Storage Blk Time (%)				0	0			14	1
Queuing Penalty (veh)				1	0			22	2

Intersection: 12: I-605 nb off-ramp/Rivergrade Road Nb & Los Angeles Street

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	LT	TR
Maximum Queue (ft)	264	310	229	345	247	1402	1408
Average Queue (ft)	172	88	58	212	146	1129	1174
95th Queue (ft)	271	206	140	306	242	1739	1682
Link Distance (ft)		336	336	400	400	1359	1359
Upstream Blk Time (%)		0	0	0		42	47
Queuing Penalty (veh)		3	0	0		0	0
Storage Bay Dist (ft)	250						
Storage Blk Time (%)	7						
Queuing Penalty (veh)	37						

Network Summary

Network wide Queuing Penalty: 66

Intersection: 1: Arrow Hwy & I-605 Off-ramp

Movement	EB	EB	EB	WB	WB	SB	SB
Directions Served	T	T	T	T	T	L	R
Maximum Queue (ft)	226	197	75	368	356	841	771
Average Queue (ft)	129	73	15	312	230	420	116
95th Queue (ft)	194	154	50	408	344	734	529
Link Distance (ft)	500	500	500	340	340	917	917
Upstream Blk Time (%)				9	2	0	0
Queuing Penalty (veh)				0	0	0	0
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Intersection: 6: I-605 nb off-ramp & Live Oak Avenue

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	884	1668
Average Queue (ft)	768	1615
95th Queue (ft)	1086	1796
Link Distance (ft)	827	1614
Upstream Blk Time (%)	75	94
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Los Angeles Street & Rivergrade Sb/605 offramp

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	LT	TR	R
Maximum Queue (ft)	324	248	290	253	310	283	1066	1114	189
Average Queue (ft)	235	140	68	199	161	152	564	569	175
95th Queue (ft)	340	263	241	274	272	229	1157	1199	239
Link Distance (ft)	294	294	294		336	336	1273	1273	
Upstream Blk Time (%)	7		0		0	0	4	6	
Queuing Penalty (veh)	0		0		3	0	0	0	
Storage Bay Dist (ft)				230					164
Storage Blk Time (%)				6	0			49	12
Queuing Penalty (veh)				29	0			132	53

Intersection: 12: I-605 nb off-ramp/Rivergrade Road Nb & Los Angeles Street

Movement	EB	EB	EB	WB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	R	LT	TR
Maximum Queue (ft)	275	382	355	444	447	418	466	436
Average Queue (ft)	266	311	184	419	406	294	292	263
95th Queue (ft)	311	500	426	433	447	585	436	408
Link Distance (ft)		336	336	400	400	400	1359	1359
Upstream Blk Time (%)		36	1	89	43	15		
Queuing Penalty (veh)		136	3	0	0	0		
Storage Bay Dist (ft)	250							
Storage Blk Time (%)	69	0						
Queuing Penalty (veh)	173	0						

Network Summary

Network wide Queuing Penalty: 529

Intersection: 1: Arrow Hwy & I-605 Off-ramp

Movement	EB	EB	EB	WB	WB	SB
Directions Served	T	T	T	T	T	L
Maximum Queue (ft)	253	248	145	168	117	252
Average Queue (ft)	160	121	48	78	27	142
95th Queue (ft)	239	214	108	138	78	226
Link Distance (ft)	500	500	500	340	340	917
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)						
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 6: I-605 nb off-ramp & Live Oak Avenue

Movement	NB	SB
Directions Served	R	R
Maximum Queue (ft)	886	1663
Average Queue (ft)	837	1500
95th Queue (ft)	955	2041
Link Distance (ft)	827	1614
Upstream Blk Time (%)	93	78
Queuing Penalty (veh)	0	0
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 11: Los Angeles Street & Rivergrade Sb/605 offramp

Movement	EB	EB	EB	WB	WB	WB	SB	SB	SB
Directions Served	T	T	R	L	T	T	LT	TR	R
Maximum Queue (ft)	333	324	325	254	305	223	438	425	189
Average Queue (ft)	307	269	216	167	126	141	275	246	149
95th Queue (ft)	340	362	414	250	225	198	430	399	244
Link Distance (ft)	294	294	294		336	336	1273	1273	
Upstream Blk Time (%)	36	13	9		0				
Queuing Penalty (veh)	0	0	0		2				
Storage Bay Dist (ft)				230					164
Storage Blk Time (%)				3	0			30	1
Queuing Penalty (veh)				10	0			46	4

Intersection: 12: I-605 nb off-ramp/Rivergrade Road Nb & Los Angeles Street

Movement	EB	EB	EB	WB	WB	NB	NB
Directions Served	L	T	T	T	T	LT	TR
Maximum Queue (ft)	274	361	308	416	367	1410	1411
Average Queue (ft)	186	123	86	304	232	1265	1284
95th Queue (ft)	277	283	218	423	344	1689	1644
Link Distance (ft)		336	336	400	400	1359	1359
Upstream Blk Time (%)		1	0	2	0	61	68
Queuing Penalty (veh)		9	1	0	0	0	0
Storage Bay Dist (ft)	250						
Storage Blk Time (%)	12	0					
Queuing Penalty (veh)	66	0					

Network Summary

Network wide Queuing Penalty: 136

APPENDIX K
Freeway Off-ramp Level of Service Reports (Synchro 10)

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	788	1653	0	519	1180
Future Volume (veh/h)	0	788	1653	0	519	1180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	857	1797	0	564	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2821	1963	0	563	
Arrive On Green	0.00	0.55	0.55	0.00	0.32	0.00
Sat Flow, veh/h	0	5443	3741	0	1781	1585
Grp Volume(v), veh/h	0	857	1797	0	564	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	0	1781	1585
Q Serve(g_s), s	0.0	7.2	36.6	0.0	25.3	0.0
Cycle Q Clear(g_c), s	0.0	7.2	36.6	0.0	25.3	0.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2821	1963	0	563	
V/C Ratio(X)	0.00	0.30	0.92	0.00	1.00	
Avail Cap(c_a), veh/h	0	2821	1963	0	563	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.6	16.2	0.0	27.3	0.0
Incr Delay (d2), s/veh	0.0	0.3	7.2	0.0	38.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	13.5	0.0	16.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	9.9	23.4	0.0	65.6	0.0
LnGrp LOS	A	A	C	A	F	
Approach Vol, veh/h		857	1797		564	A
Approach Delay, s/veh		9.9	23.4		65.6	
Approach LOS		A	C		E	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		50.0		30.0		50.0
Change Period (Y+Rc), s		5.8		* 4.7		5.8
Max Green Setting (Gmax), s		44.2		* 25		44.2
Max Q Clear Time (g_c+I1), s		9.2		27.3		38.6
Green Ext Time (p_c), s		6.2		0.0		4.6

Intersection Summary	
HCM 6th Ctrl Delay	27.2
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	779	397	0	1763	415	0	0	0	0	0	0
Future Volume (Veh/h)	0	779	397	0	1763	415	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	847	432	0	1916	451	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	1916			847			1805	2763	424	2340	2763	958
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1916			716			1732	2749	267	2299	2749	958
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	305			830			53	18	689	20	18	258

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	424	424	432	958	958	451
Volume Left	0	0	0	0	0	0
Volume Right	0	0	432	0	0	451
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.25	0.25	0.25	0.56	0.56	0.27
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	349	633	685	1905	0	0
Future Volume (veh/h)	349	633	685	1905	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No		
Adj Sat Flow, veh/h/ln	1870	1945	1870	1945		
Adj Flow Rate, veh/h	379	688	745	2071		
Peak Hour Factor	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1617	750	679	3304		
Arrive On Green	0.46	0.46	0.38	0.89		
Sat Flow, veh/h	3647	1648	1781	3793		
Grp Volume(v), veh/h	379	688	745	2071		
Grp Sat Flow(s),veh/h/ln	1777	1648	1781	1848		
Q Serve(g_s), s	5.9	35.1	34.3	12.2		
Cycle Q Clear(g_c), s	5.9	35.1	34.3	12.2		
Prop In Lane		1.00	1.00			
Lane Grp Cap(c), veh/h	1617	750	679	3304		
V/C Ratio(X)	0.23	0.92	1.10	0.63		
Avail Cap(c_a), veh/h	1765	819	679	3458		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.0	22.9	27.9	1.2		
Incr Delay (d2), s/veh	0.1	14.4	64.2	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.1	14.9	25.2	0.2		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.0	37.3	92.1	1.5		
LnGrp LOS	B	D	F	A		
Approach Vol, veh/h	1067			2816		
Approach Delay, s/veh	29.4			25.5		
Approach LOS	C			C		

Timer - Assigned Phs		3	4		8
Phs Duration (G+Y+Rc), s		39.5	46.8		86.3
Change Period (Y+Rc), s		* 5.2	5.8		5.8
Max Green Setting (Gmax), s		* 34	44.7		84.2
Max Q Clear Time (g_c+I1), s		37.3	38.1		15.2
Green Ext Time (p_c), s		0.0	2.8		32.2

Intersection Summary	
HCM 6th Ctrl Delay	26.5
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	3,409.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	2.878

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	91	0	0	414	0	15	0	0	24	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1457	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	193	0	0	263	0	101	0	0	364	0
Total Analysis Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1457	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.96	0.00	0.00	2.88	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	67.77	0.00	0.00	3409.40	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	26.74	0.00	0.00	347.74	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	668.48	0.00	0.00	8693.53	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	67.77			3409.40			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	987.52											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	524	376	451	952	0	0	0	0	93	327	533
Future Volume (vph)	0	524	376	451	952	0	0	0	0	93	327	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	16	11	13	13	12	12	12	12	12	12
Total Lost time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Lane Util. Factor		0.95	1.00	1.00	0.95						0.91	0.91
Frt		1.00	0.85	1.00	1.00						0.95	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3657	1794	1711	3657						3185	1441
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3657	1794	1711	3657						3185	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	570	409	490	1035	0	0	0	0	101	355	579
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	0	0	65	122
Lane Group Flow (vph)	0	570	342	490	1035	0	0	0	0	0	646	202
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		23.7	23.7	25.8	54.7						24.4	24.4
Effective Green, g (s)		23.7	23.7	25.8	54.7						24.4	24.4
Actuated g/C Ratio		0.26	0.26	0.29	0.61						0.27	0.27
Clearance Time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Vehicle Extension (s)		2.5	2.5	5.0	2.5						3.0	3.0
Lane Grp Cap (vph)		963	472	490	2222						863	390
v/s Ratio Prot		0.16		c0.29	0.28							
v/s Ratio Perm			c0.19								0.20	0.14
v/c Ratio		0.59	0.72	1.00	0.47						0.75	0.52
Uniform Delay, d1		28.9	30.2	32.1	9.7						30.0	27.8
Progression Factor		1.00	1.00	0.79	2.23						1.00	1.00
Incremental Delay, d2		2.7	9.3	12.2	0.1						5.9	4.9
Delay (s)		31.6	39.5	37.7	21.6						35.9	32.7
Level of Service		C	D	D	C						D	C
Approach Delay (s)		34.9			26.8			0.0			34.9	
Approach LOS		C			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	31.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	90.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	328	396	0	0	947	161	401	471	258	0	0	0
Future Volume (veh/h)	328	396	0	0	947	161	401	471	258	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1945	0	0	1870	1945	1900	1870	1900			
Adj Flow Rate, veh/h	357	430	0	0	1029	0	436	512	280			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	336	1704	0	0	762		501	621	353			
Arrive On Green	0.06	0.15	0.00	0.00	0.21	0.00	0.42	0.42	0.42			
Sat Flow, veh/h	1781	3793	0	0	3647	1648	1200	1485	844			
Grp Volume(v), veh/h	357	430	0	0	1029	0	658	0	570			
Grp Sat Flow(s),veh/h/ln	1781	1848	0	0	1777	1648	1810	0	1718			
Q Serve(g_s), s	17.0	9.2	0.0	0.0	19.3	0.0	29.9	0.0	26.0			
Cycle Q Clear(g_c), s	17.0	9.2	0.0	0.0	19.3	0.0	29.9	0.0	26.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.66		0.49			
Lane Grp Cap(c), veh/h	336	1704	0	0	762		756	0	718			
V/C Ratio(X)	1.06	0.25	0.00	0.00	1.35		0.87	0.00	0.79			
Avail Cap(c_a), veh/h	336	1704	0	0	762		782	0	743			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.78	0.78	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.2	24.5	0.0	0.0	35.4	0.0	24.0	0.0	22.8			
Incr Delay (d2), s/veh	60.4	0.3	0.0	0.0	166.5	0.0	11.1	0.0	6.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	13.6	4.2	0.0	0.0	25.4	0.0	14.4	0.0	11.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	102.6	24.8	0.0	0.0	201.8	0.0	35.0	0.0	29.6			
LnGrp LOS	F	C	A	A	F		D	A	C			
Approach Vol, veh/h		787			1029	A		1228				
Approach Delay, s/veh		60.1			201.8			32.5				
Approach LOS		E			F			C				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		47.3			22.2	25.1		42.7				
Change Period (Y+Rc), s		5.8			* 5.2	5.8		5.1				
Max Green Setting (Gmax), s		39.2			* 17	18.0		38.9				
Max Q Clear Time (g_c+I1), s		11.2			19.0	21.3		31.9				
Green Ext Time (p_c), s		5.1			0.0	0.0		5.7				

Intersection Summary	
HCM 6th Ctrl Delay	96.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1772	510	0	280	454
Future Volume (veh/h)	0	1772	510	0	280	454
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1926	554	0	304	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3424	2383	0	353	
Arrive On Green	0.00	0.67	0.67	0.00	0.20	0.00
Sat Flow, veh/h	0	5443	3741	0	1781	1585
Grp Volume(v), veh/h	0	1926	554	0	304	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	0	1781	1585
Q Serve(g_s), s	0.0	16.0	4.9	0.0	13.2	0.0
Cycle Q Clear(g_c), s	0.0	16.0	4.9	0.0	13.2	0.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3424	2383	0	353	
V/C Ratio(X)	0.00	0.56	0.23	0.00	0.86	
Avail Cap(c_a), veh/h	0	3424	2383	0	563	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	7.0	5.1	0.0	31.0	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	7.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.1	1.2	0.0	6.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.6	5.2	0.0	38.9	0.0
LnGrp LOS	A	A	A	A	D	
Approach Vol, veh/h		1926	554		304	A
Approach Delay, s/veh		7.6	5.2		38.9	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		59.5		20.5		59.5
Change Period (Y+Rc), s		5.8		* 4.7		5.8
Max Green Setting (Gmax), s		44.2		* 25		44.2
Max Q Clear Time (g_c+I1), s		18.0		15.2		6.9
Green Ext Time (p_c), s		16.0		0.7		3.7

Intersection Summary	
HCM 6th Ctrl Delay	10.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1441	458	0	473	266	0	0	0	0	0	0
Future Volume (Veh/h)	0	1441	458	0	473	266	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1566	498	0	514	289	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.75			0.75	0.75	0.75	0.75	0.75	
vC, conflicting volume	514			1566			1823	2080	783	1297	2080	257
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	514			1099			1440	1781	62	743	1781	257
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1048			476			70	61	747	229	61	742

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	783	783	498	257	257	289
Volume Left	0	0	0	0	0	0
Volume Right	0	0	498	0	0	289
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.46	0.46	0.29	0.15	0.15	0.17
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1084	1755	649	1179	0	0
Future Volume (veh/h)	1084	1755	649	1179	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No		
Adj Sat Flow, veh/h/ln	1870	1945	1870	1945		
Adj Flow Rate, veh/h	1178	1908	705	1282		
Peak Hour Factor	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1765	819	679	3458		
Arrive On Green	0.50	0.50	0.38	0.94		
Sat Flow, veh/h	3647	1648	1781	3793		
Grp Volume(v), veh/h	1178	1908	705	1282		
Grp Sat Flow(s),veh/h/ln	1777	1648	1781	1848		
Q Serve(g_s), s	22.5	44.7	34.3	3.1		
Cycle Q Clear(g_c), s	22.5	44.7	34.3	3.1		
Prop In Lane		1.00	1.00			
Lane Grp Cap(c), veh/h	1765	819	679	3458		
V/C Ratio(X)	0.67	2.33	1.04	0.37		
Avail Cap(c_a), veh/h	1765	819	679	3458		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.1	22.6	27.9	0.3		
Incr Delay (d2), s/veh	1.0	602.5	44.9	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.2	151.7	21.5	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	625.2	72.8	0.4		
LnGrp LOS	B	F	F	A		
Approach Vol, veh/h	3086			1987		
Approach Delay, s/veh	393.4			26.0		
Approach LOS	F			C		

Timer - Assigned Phs		3	4		8
Phs Duration (G+Y+Rc), s		39.5	50.5		90.0
Change Period (Y+Rc), s		* 5.2	5.8		5.8
Max Green Setting (Gmax), s		* 34	44.7		84.2
Max Q Clear Time (g_c+I1), s		37.3	47.7		6.1
Green Ext Time (p_c), s		0.0	0.0		12.3

Intersection Summary	
HCM 6th Ctrl Delay	249.5
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	1,033.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.556

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	20	0	0	129	0	4	0	0	96	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1093	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	177	0	0	187	0	271	0	0	273	0
Total Analysis Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1093	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	1.45	0.00	0.00	1.56	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	853.72	0.00	0.00	1033.76	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	119.20	0.00	0.00	141.74	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2980.01	0.00	0.00	3543.57	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	853.72			1033.76			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	379.34											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1237	525	304	752	0	0	0	0	140	337	303
Future Volume (vph)	0	1237	525	304	752	0	0	0	0	140	337	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	16	11	13	13	12	12	12	12	12	12
Total Lost time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Lane Util. Factor		0.95	1.00	1.00	0.95						0.91	0.91
Frt		1.00	0.85	1.00	1.00						0.98	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (prot)		3657	1794	1711	3657						3288	1441
Flt Permitted		1.00	1.00	0.95	1.00						0.99	1.00
Satd. Flow (perm)		3657	1794	1711	3657						3288	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1345	571	330	817	0	0	0	0	152	366	329
RTOR Reduction (vph)	0	0	102	0	0	0	0	0	0	0	11	212
Lane Group Flow (vph)	0	1345	469	330	817	0	0	0	0	0	576	48
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		37.3	37.3	22.7	65.2						13.9	13.9
Effective Green, g (s)		37.3	37.3	22.7	65.2						13.9	13.9
Actuated g/C Ratio		0.41	0.41	0.25	0.72						0.15	0.15
Clearance Time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Vehicle Extension (s)		2.5	2.5	5.0	2.5						3.0	3.0
Lane Grp Cap (vph)		1515	743	431	2649						507	222
v/s Ratio Prot		c0.37		c0.19	0.22							
v/s Ratio Perm			0.26								0.18	0.03
v/c Ratio		0.89	0.63	0.77	0.31						1.14	0.22
Uniform Delay, d1		24.4	20.9	31.2	4.4						38.0	33.3
Progression Factor		1.00	1.00	0.82	2.61						1.00	1.00
Incremental Delay, d2		8.1	4.1	0.9	0.0						83.1	2.2
Delay (s)		32.5	24.9	26.4	11.5						121.1	35.5
Level of Service		C	C	C	B						F	D
Approach Delay (s)		30.3			15.8			0.0			94.9	
Approach LOS		C			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	93.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	295	1072	0	0	536	66	527	312	780	0	0	0
Future Volume (veh/h)	295	1072	0	0	536	66	527	312	780	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1945	0	0	1870	1945	1900	1870	1900			
Adj Flow Rate, veh/h	321	1165	0	0	583	0	573	339	848			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	336	1651	0	0	711		492	291	685			
Arrive On Green	0.06	0.15	0.00	0.00	0.20	0.00	0.43	0.43	0.43			
Sat Flow, veh/h	1781	3793	0	0	3647	1648	1139	674	1585			
Grp Volume(v), veh/h	321	1165	0	0	583	0	912	0	848			
Grp Sat Flow(s),veh/h/ln	1781	1848	0	0	1777	1648	1813	0	1585			
Q Serve(g_s), s	16.2	27.0	0.0	0.0	14.1	0.0	38.9	0.0	38.9			
Cycle Q Clear(g_c), s	16.2	27.0	0.0	0.0	14.1	0.0	38.9	0.0	38.9			
Prop In Lane	1.00		0.00	0.00		1.00	0.63		1.00			
Lane Grp Cap(c), veh/h	336	1651	0	0	711		784	0	685			
V/C Ratio(X)	0.95	0.71	0.00	0.00	0.82		1.16	0.00	1.24			
Avail Cap(c_a), veh/h	336	1651	0	0	711		784	0	685			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.34	0.34	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	41.8	32.7	0.0	0.0	34.5	0.0	25.6	0.0	25.6			
Incr Delay (d2), s/veh	18.8	0.9	0.0	0.0	10.3	0.0	87.4	0.0	119.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	9.3	13.3	0.0	0.0	6.7	0.0	34.6	0.0	36.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.6	33.6	0.0	0.0	44.7	0.0	112.9	0.0	144.8			
LnGrp LOS	E	C	A	A	D		F	A	F			
Approach Vol, veh/h		1486			583	A		1760				
Approach Delay, s/veh		39.5			44.7			128.3				
Approach LOS		D			D			F				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		46.0			22.2	23.8		44.0				
Change Period (Y+Rc), s		5.8			* 5.2	5.8		5.1				
Max Green Setting (Gmax), s		39.2			* 17	18.0		38.9				
Max Q Clear Time (g_c+I1), s		29.0			18.2	16.1		40.9				
Green Ext Time (p_c), s		7.5			0.0	1.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	81.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	788	1653	0	564	1180
Future Volume (veh/h)	0	788	1653	0	564	1180
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	857	1797	0	613	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	2821	1963	0	563	
Arrive On Green	0.00	0.55	0.55	0.00	0.32	0.00
Sat Flow, veh/h	0	5443	3741	0	1781	1585
Grp Volume(v), veh/h	0	857	1797	0	613	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	0	1781	1585
Q Serve(g_s), s	0.0	7.2	36.6	0.0	25.3	0.0
Cycle Q Clear(g_c), s	0.0	7.2	36.6	0.0	25.3	0.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	2821	1963	0	563	
V/C Ratio(X)	0.00	0.30	0.92	0.00	1.09	
Avail Cap(c_a), veh/h	0	2821	1963	0	563	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	9.6	16.2	0.0	27.3	0.0
Incr Delay (d2), s/veh	0.0	0.3	7.2	0.0	64.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.3	13.5	0.0	20.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	9.9	23.4	0.0	91.4	0.0
LnGrp LOS	A	A	C	A	F	
Approach Vol, veh/h		857	1797		613	A
Approach Delay, s/veh		9.9	23.4		91.4	
Approach LOS		A	C		F	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		50.0		30.0		50.0
Change Period (Y+Rc), s		5.8		* 4.7		5.8
Max Green Setting (Gmax), s		44.2		* 25		44.2
Max Q Clear Time (g_c+I1), s		9.2		27.3		38.6
Green Ext Time (p_c), s		6.2		0.0		4.6

Intersection Summary	
HCM 6th Ctrl Delay	32.6
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	824	397	0	1763	437	0	0	0	0	0	0
Future Volume (Veh/h)	0	824	397	0	1763	437	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	896	432	0	1916	475	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.94			0.94	0.94	0.94	0.94	0.94	
vC, conflicting volume	1916			896			1854	2812	448	2364	2812	958
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1916			760			1780	2800	283	2323	2800	958
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	305			796			49	17	670	19	17	258

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	448	448	432	958	958	475
Volume Left	0	0	0	0	0	0
Volume Right	0	0	432	0	0	475
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.26	0.26	0.25	0.56	0.56	0.28
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	349	633	707	1905	0	0
Future Volume (veh/h)	349	633	707	1905	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No		
Adj Sat Flow, veh/h/ln	1870	1945	1870	1945		
Adj Flow Rate, veh/h	379	688	768	2071		
Peak Hour Factor	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1617	750	679	3304		
Arrive On Green	0.46	0.46	0.38	0.89		
Sat Flow, veh/h	3647	1648	1781	3793		
Grp Volume(v), veh/h	379	688	768	2071		
Grp Sat Flow(s),veh/h/ln	1777	1648	1781	1848		
Q Serve(g_s), s	5.9	35.1	34.3	12.2		
Cycle Q Clear(g_c), s	5.9	35.1	34.3	12.2		
Prop In Lane		1.00	1.00			
Lane Grp Cap(c), veh/h	1617	750	679	3304		
V/C Ratio(X)	0.23	0.92	1.13	0.63		
Avail Cap(c_a), veh/h	1765	819	679	3458		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	15.0	22.9	27.9	1.2		
Incr Delay (d2), s/veh	0.1	14.4	76.7	0.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.1	14.9	27.5	0.2		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	15.0	37.3	104.5	1.5		
LnGrp LOS	B	D	F	A		
Approach Vol, veh/h	1067			2839		
Approach Delay, s/veh	29.4			29.4		
Approach LOS	C			C		

Timer - Assigned Phs		3	4		8
Phs Duration (G+Y+Rc), s		39.5	46.8		86.3
Change Period (Y+Rc), s		* 5.2	5.8		5.8
Max Green Setting (Gmax), s		* 34	44.7		84.2
Max Q Clear Time (g_c+I1), s		37.3	38.1		15.2
Green Ext Time (p_c), s		0.0	2.8		32.2

Intersection Summary	
HCM 6th Ctrl Delay	29.4
HCM 6th LOS	C

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	3,496.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	2.926

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	655	0	0	613	0	374	0	0	1378	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	91	0	0	414	0	15	0	0	46	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1479	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	193	0	0	263	0	101	0	0	370	0
Total Analysis Volume [veh/h]	0	0	772	0	0	1052	0	404	0	0	1479	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	0.96	0.00	0.00	2.93	0.00	0.00	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	67.77	0.00	0.00	3496.92	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	26.74	0.00	0.00	350.73	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	668.48	0.00	0.00	8768.26	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	67.77			3496.92			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	1006.49											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	530	376	501	955	0	0	0	0	234	327	533
Future Volume (vph)	0	530	376	501	955	0	0	0	0	234	327	533
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	16	11	13	13	12	12	12	12	12	12
Total Lost time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Lane Util. Factor		0.95	1.00	1.00	0.95						0.91	0.91
Frt		1.00	0.85	1.00	1.00						0.96	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3657	1794	1711	3657						3211	1441
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3657	1794	1711	3657						3211	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	576	409	545	1038	0	0	0	0	254	355	579
RTOR Reduction (vph)	0	0	65	0	0	0	0	0	0	0	30	121
Lane Group Flow (vph)	0	576	344	545	1038	0	0	0	0	0	787	250
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		23.8	23.8	25.8	54.8						24.3	24.3
Effective Green, g (s)		23.8	23.8	25.8	54.8						24.3	24.3
Actuated g/C Ratio		0.26	0.26	0.29	0.61						0.27	0.27
Clearance Time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Vehicle Extension (s)		2.5	2.5	5.0	2.5						3.0	3.0
Lane Grp Cap (vph)		967	474	490	2226						866	389
v/s Ratio Prot		0.16		c0.32	0.28							
v/s Ratio Perm			c0.19								0.25	0.17
v/c Ratio		0.60	0.73	1.11	0.47						0.91	0.64
Uniform Delay, d1		28.9	30.1	32.1	9.6						31.8	29.0
Progression Factor		1.00	1.00	0.83	2.25						1.00	1.00
Incremental Delay, d2		2.7	9.4	53.6	0.1						15.1	7.9
Delay (s)		31.6	39.5	80.1	21.7						46.9	36.9
Level of Service		C	D	F	C						D	D
Approach Delay (s)		34.9			41.8			0.0			43.8	
Approach LOS		C			D			A			D	

Intersection Summary			
HCM 2000 Control Delay	40.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.92		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	99.0%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	373	498	0	0	1000	206	401	543	330	0	0	0
Future Volume (veh/h)	373	498	0	0	1000	206	401	543	330	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1945	0	0	1870	1945	1900	1870	1900			
Adj Flow Rate, veh/h	405	541	0	0	1087	0	436	590	359			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	336	1656	0	0	715		459	646	410			
Arrive On Green	0.06	0.15	0.00	0.00	0.20	0.00	0.43	0.43	0.43			
Sat Flow, veh/h	1781	3793	0	0	3647	1648	1064	1500	952			
Grp Volume(v), veh/h	405	541	0	0	1087	0	744	0	641			
Grp Sat Flow(s),veh/h/ln	1781	1848	0	0	1777	1648	1817	0	1699			
Q Serve(g_s), s	17.0	11.8	0.0	0.0	18.1	0.0	35.5	0.0	31.0			
Cycle Q Clear(g_c), s	17.0	11.8	0.0	0.0	18.1	0.0	35.5	0.0	31.0			
Prop In Lane	1.00		0.00	0.00		1.00	0.59		0.56			
Lane Grp Cap(c), veh/h	336	1656	0	0	715		783	0	732			
V/C Ratio(X)	1.20	0.33	0.00	0.00	1.52		0.95	0.00	0.87			
Avail Cap(c_a), veh/h	336	1656	0	0	715		785	0	734			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.77	0.77	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.2	26.2	0.0	0.0	35.9	0.0	24.7	0.0	23.4			
Incr Delay (d2), s/veh	111.6	0.4	0.0	0.0	241.0	0.0	21.3	0.0	12.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	18.4	5.6	0.0	0.0	31.3	0.0	18.9	0.0	14.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	153.8	26.6	0.0	0.0	276.9	0.0	46.0	0.0	35.6			
LnGrp LOS	F	C	A	A	F		D	A	D			
Approach Vol, veh/h		946			1087	A		1385				
Approach Delay, s/veh		81.1			276.9			41.2				
Approach LOS		F			F			D				

Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		46.1			22.2	23.9		43.9				
Change Period (Y+Rc), s		5.8			* 5.2	5.8		5.1				
Max Green Setting (Gmax), s		39.2			* 17	18.0		38.9				
Max Q Clear Time (g_c+I1), s		13.8			19.0	20.1		37.5				
Green Ext Time (p_c), s		6.4			0.0	0.0		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	127.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	1772	510	0	301	454
Future Volume (veh/h)	0	1772	510	0	301	454
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	0	1870	1870	0	1870	1870
Adj Flow Rate, veh/h	0	1926	554	0	327	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	0	2	2
Cap, veh/h	0	3359	2338	0	376	
Arrive On Green	0.00	0.66	0.66	0.00	0.21	0.00
Sat Flow, veh/h	0	5443	3741	0	1781	1585
Grp Volume(v), veh/h	0	1926	554	0	327	0
Grp Sat Flow(s),veh/h/ln	0	1702	1777	0	1781	1585
Q Serve(g_s), s	0.0	16.6	5.1	0.0	14.2	0.0
Cycle Q Clear(g_c), s	0.0	16.6	5.1	0.0	14.2	0.0
Prop In Lane	0.00			0.00	1.00	1.00
Lane Grp Cap(c), veh/h	0	3359	2338	0	376	
V/C Ratio(X)	0.00	0.57	0.24	0.00	0.87	
Avail Cap(c_a), veh/h	0	3359	2338	0	563	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	0.0	7.5	5.5	0.0	30.5	0.0
Incr Delay (d2), s/veh	0.0	0.7	0.1	0.0	9.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	4.4	1.3	0.0	6.9	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.2	5.6	0.0	40.0	0.0
LnGrp LOS	A	A	A	A	D	
Approach Vol, veh/h		1926	554		327	A
Approach Delay, s/veh		8.2	5.6		40.0	
Approach LOS		A	A		D	

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		58.4		21.6		58.4
Change Period (Y+Rc), s		5.8		* 4.7		5.8
Max Green Setting (Gmax), s		44.2		* 25		44.2
Max Q Clear Time (g_c+I1), s		18.6		16.2		7.1
Green Ext Time (p_c), s		15.7		0.7		3.7

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1462	458	0	473	306	0	0	0	0	0	0
Future Volume (Veh/h)	0	1462	458	0	473	306	0	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1589	498	0	514	333	0	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		544										
pX, platoon unblocked				0.75			0.75	0.75	0.75	0.75	0.75	
vC, conflicting volume	514			1589			1846	2103	794	1308	2103	257
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	514			1116			1459	1802	55	742	1802	257
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	100	100	100	100
cM capacity (veh/h)	1048			465			68	59	749	228	59	742

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	WB 3
Volume Total	794	794	498	257	257	333
Volume Left	0	0	0	0	0	0
Volume Right	0	0	498	0	0	333
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.47	0.47	0.29	0.15	0.15	0.20
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS						
Approach Delay (s)	0.0			0.0		
Approach LOS						

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1084	1755	689	1179	0	0
Future Volume (veh/h)	1084	1755	689	1179	0	0
Initial Q (Qb), veh	0	0	0	0		
Ped-Bike Adj(A_pbT)		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00		
Work Zone On Approach	No			No		
Adj Sat Flow, veh/h/ln	1870	1945	1870	1945		
Adj Flow Rate, veh/h	1178	1908	749	1282		
Peak Hour Factor	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	2	2	2	2		
Cap, veh/h	1765	819	679	3458		
Arrive On Green	0.50	0.50	0.38	0.94		
Sat Flow, veh/h	3647	1648	1781	3793		
Grp Volume(v), veh/h	1178	1908	749	1282		
Grp Sat Flow(s),veh/h/ln	1777	1648	1781	1848		
Q Serve(g_s), s	22.5	44.7	34.3	3.1		
Cycle Q Clear(g_c), s	22.5	44.7	34.3	3.1		
Prop In Lane		1.00	1.00			
Lane Grp Cap(c), veh/h	1765	819	679	3458		
V/C Ratio(X)	0.67	2.33	1.10	0.37		
Avail Cap(c_a), veh/h	1765	819	679	3458		
HCM Platoon Ratio	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.1	22.6	27.9	0.3		
Incr Delay (d2), s/veh	1.0	602.5	66.3	0.1		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	8.2	151.7	25.6	0.0		
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.0	625.2	94.2	0.4		
LnGrp LOS	B	F	F	A		
Approach Vol, veh/h	3086			2031		
Approach Delay, s/veh	393.4			35.0		
Approach LOS	F			C		

Timer - Assigned Phs		3	4		8
Phs Duration (G+Y+Rc), s		39.5	50.5		90.0
Change Period (Y+Rc), s		* 5.2	5.8		5.8
Max Green Setting (Gmax), s		* 34	44.7		84.2
Max Q Clear Time (g_c+I1), s		37.3	47.7		6.1
Green Ext Time (p_c), s		0.0	0.0		12.3

Intersection Summary	
HCM 6th Ctrl Delay	251.1
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection Level Of Service Report
Intersection 6: Live Oak Ave and I-605 NB Off-ramp

Control Type:	Two-way stop	Delay (sec / veh):	1,119.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	1 hour	Volume to Capacity (v/c):	1.604

Intersection Setup

Name							Live Oak Ave			Live Oak Ave		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	15.00	12.00	12.00	17.00	12.00	13.00	12.00	12.00	13.50	12.00
No. of Lanes in Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Speed [mph]	30.00			30.00			45.00			45.00		
Grade [%]	0.00			0.00			0.00			0.00		
Crosswalk	Yes			Yes			No			No		

Volumes

Name							Live Oak Ave			Live Oak Ave		
Base Volume Input [veh/h]	0	0	660	0	0	596	0	1037	0	0	959	0
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
Growth Factor	1.0000	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000	1.0400	1.0000	1.0000	1.0400	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	20	0	0	129	0	4	0	0	136	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1133	0
Peak Hour Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	0	177	0	0	187	0	271	0	0	283	0
Total Analysis Volume [veh/h]	0	0	706	0	0	749	0	1082	0	0	1133	0
Pedestrian Volume [ped/h]	0			0			0			0		

Intersection Settings

Priority Scheme	Stop	Stop	Free	Free
Flared Lane				
Storage Area [veh]	0	0	0	0
Two-Stage Gap Acceptance	No	No		
Number of Storage Spaces in Median	0	0	0	0

Movement, Approach, & Intersection Results

V/C, Movement V/C Ratio	0.00	0.00	1.45	0.00	0.00	1.60	0.00	0.01	0.00	0.00	0.01	0.00
d_M, Delay for Movement [s/veh]	0.00	0.00	853.72	0.00	0.00	1119.23	0.00	0.00	0.00	0.00	0.00	0.00
Movement LOS			F			F		A			A	
95th-Percentile Queue Length [veh/ln]	0.00	0.00	119.20	0.00	0.00	148.52	0.00	0.00	0.00	0.00	0.00	0.00
95th-Percentile Queue Length [ft/ln]	0.00	0.00	2980.01	0.00	0.00	3713.05	0.00	0.00	0.00	0.00	0.00	0.00
d_A, Approach Delay [s/veh]	853.72			1119.23			0.00			0.00		
Approach LOS	F			F			A			A		
d_I, Intersection Delay [s/veh]	392.65											
Intersection LOS	F											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1240	525	392	757	0	0	0	0	206	337	303
Future Volume (vph)	0	1240	525	392	757	0	0	0	0	206	337	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	13	13	16	11	13	13	12	12	12	12	12	12
Total Lost time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Lane Util. Factor		0.95	1.00	1.00	0.95						0.91	0.91
Frt		1.00	0.85	1.00	1.00						0.99	0.85
Flt Protected		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (prot)		3657	1794	1711	3657						3293	1441
Flt Permitted		1.00	1.00	0.95	1.00						0.98	1.00
Satd. Flow (perm)		3657	1794	1711	3657						3293	1441
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1348	571	426	823	0	0	0	0	224	366	329
RTOR Reduction (vph)	0	0	71	0	0	0	0	0	0	0	7	210
Lane Group Flow (vph)	0	1348	500	426	823	0	0	0	0	0	632	70
Turn Type		NA	Perm	Prot	NA					Perm	NA	Perm
Protected Phases		2		1	6						4	
Permitted Phases			2							4		4
Actuated Green, G (s)		34.9	34.9	25.1	65.2						13.9	13.9
Effective Green, g (s)		34.9	34.9	25.1	65.2						13.9	13.9
Actuated g/C Ratio		0.39	0.39	0.28	0.72						0.15	0.15
Clearance Time (s)		5.8	5.8	5.2	5.8						5.1	5.1
Vehicle Extension (s)		2.5	2.5	5.0	2.5						3.0	3.0
Lane Grp Cap (vph)		1418	695	477	2649						508	222
v/s Ratio Prot		c0.37		c0.25	0.23							
v/s Ratio Perm			0.28								0.19	0.05
v/c Ratio		0.95	0.72	0.89	0.31						1.24	0.32
Uniform Delay, d1		26.7	23.4	31.2	4.4						38.0	33.8
Progression Factor		1.00	1.00	0.81	2.80						1.00	1.00
Incremental Delay, d2		14.7	6.3	2.4	0.0						125.8	3.7
Delay (s)		41.4	29.7	27.7	12.4						163.9	37.5
Level of Service		D	C	C	B						F	D
Approach Delay (s)		37.9			17.6			0.0			125.4	
Approach LOS		D			B			A			F	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.1
Intersection Capacity Utilization	99.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	316	1120	0	0	629	146	527	346	814	0	0	0
Future Volume (veh/h)	316	1120	0	0	629	146	527	346	814	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	1870	1945	0	0	1870	1945	1900	1870	1900			
Adj Flow Rate, veh/h	343	1217	0	0	684	0	573	376	885			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	2	2	0	0	2	2	0	2	0			
Cap, veh/h	336	1651	0	0	711		474	311	685			
Arrive On Green	0.06	0.15	0.00	0.00	0.20	0.00	0.43	0.43	0.43			
Sat Flow, veh/h	1781	3793	0	0	3647	1648	1096	719	1585			
Grp Volume(v), veh/h	343	1217	0	0	684	0	949	0	885			
Grp Sat Flow(s),veh/h/ln	1781	1848	0	0	1777	1648	1816	0	1585			
Q Serve(g_s), s	17.0	28.3	0.0	0.0	17.2	0.0	38.9	0.0	38.9			
Cycle Q Clear(g_c), s	17.0	28.3	0.0	0.0	17.2	0.0	38.9	0.0	38.9			
Prop In Lane	1.00		0.00	0.00		1.00	0.60		1.00			
Lane Grp Cap(c), veh/h	336	1651	0	0	711		785	0	685			
V/C Ratio(X)	1.02	0.74	0.00	0.00	0.96		1.21	0.00	1.29			
Avail Cap(c_a), veh/h	336	1651	0	0	711		785	0	685			
HCM Platoon Ratio	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.20	0.20	0.00	0.00	1.00	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	42.2	33.3	0.0	0.0	35.7	0.0	25.6	0.0	25.6			
Incr Delay (d2), s/veh	26.9	0.6	0.0	0.0	25.7	0.0	106.0	0.0	142.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	10.5	13.9	0.0	0.0	9.5	0.0	38.7	0.0	40.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.1	33.9	0.0	0.0	61.4	0.0	131.5	0.0	167.6			
LnGrp LOS	F	C	A	A	E		F	A	F			
Approach Vol, veh/h		1560			684	A		1834				
Approach Delay, s/veh		41.7			61.4			148.9				
Approach LOS		D			E			F				
Timer - Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		46.0			22.2	23.8		44.0				
Change Period (Y+Rc), s		5.8			* 5.2	5.8		5.1				
Max Green Setting (Gmax), s		39.2			* 17	18.0		38.9				
Max Q Clear Time (g_c+I1), s		30.3			19.0	19.2		40.9				
Green Ext Time (p_c), s		6.8			0.0	0.0		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	93.2
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

APPENDIX L
Traffic Signal Warrant Worksheets

INTERSECTION:

MAJOR: Los Angeles Street

MINOR: Project Driveway

SCENARIO Future post-project Conditions

WARRANT 1 & 2 DATA INPUT

COUNT DATE 5/2/2018 and 5/3/2018

Urban or Rural ? **R** → **population?**

	# Lanes
Both Approaches - Major Street	4
Higher Approach - Minor Street	1

ADT - 8 HOUR VOLUMES

** input highest to lowest **

Time Period	MAJOR Both Approaches	MINOR Highest Approach	80% MAJOR Both Approaches	80% MINOR Highest Approach
4:00-5:00PM			0	0
6:00-7:00PM			0	0
5:00-6:00PM			0	0
3:00-4:00PM			0	0
2:00-3:00PM			0	0
7:00-8:00PM			0	0
1:00-2:00PM			0	0
12:00-1:00PM			0	0

WARRANT 3 DATA INPUT

AM Total Vol. 1996 PM Total Vol. 2631

PEAK HOUR TRAFFIC VOLUME DATA	AM PEAK	PM PEAK	AM DELAY
Major Street-Approach 1:	814	1854	18.2
Major Street-Approach 2:	1080	596	PM DELAY
Minor Street-Higher Volume App:	102	181	37.95

WARRANTS 4 PEDESTRIAN VOLUME

** input highest to lowest **

PART 1 Time	Vehicle Vols	Pedestrian Vols
4:00-5:00PM	0	
5:00-6:00PM	0	
3:00-4:00PM	0	
2:00-3:00PM	0	

Distance to Nearest Traffic Signal

Feet

School Age Ped Crossing

Children

PART 2 Time	Vehicle Vols	Pedestrian Volumes
2:00-3:00PM	0	0

Ped Crossing - < 4 ft / sec ? yes or no

WARRANTS 5 SCHOOL CROSSING

Part C

VEH / HR AM Peak PM Peak 0

School Ages Ped Cross / Hr

AM PEAK

PM PEAK

School Ages Ped Cross / Day

AM PEAK

PM PEAK

NEW INTERSECTION - Figure 4C-103

double check where these values came from

Daily Traffic Volume

Major Approach 1	12835	**Conditon A**		**80%**
Major Approach 2	13787	Satifiy?	NO	NO
TOTAL (Both) Approaches	26622	**Conditon B**		
Minor Approach	1105	Satifiy?	YES	YES
(Higher Volume)				

INTERSECTION: Los Angeles Street & Project Driveway

Figure 4C-101 (CA). Traffic Signal Warrants Worksheets (Sheet 2 of 5)

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED* **YES** ☐ **NO** ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	4:00-5:00PM	6:00-7:00PM	5:00-6:00PM	3:00-4:00PM	Hour
Both Approaches - Major Street		x					
Higher Approach - Minor Street	x						

*All plotted points fall above the curves in Figure 4C-1. (Urban Areas)	YES ☐	NO ☐
OR, All plotted points fall above the curves in Figure 4C-2. (Rural Areas)	YES ☐	NO ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied)

SATISFIED **YES** ☒ **NO** ☐

PART A

SATISFIED **YES** ☐ **NO** ☒

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1	The total delay experienced for traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; AND *37.95 seconds in delay & 1 vehicle-hours of delay*	YES ☐	NO ☒
2	The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; AND	YES ☒	NO ☐
3	The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	YES ☒	NO ☐

PART B

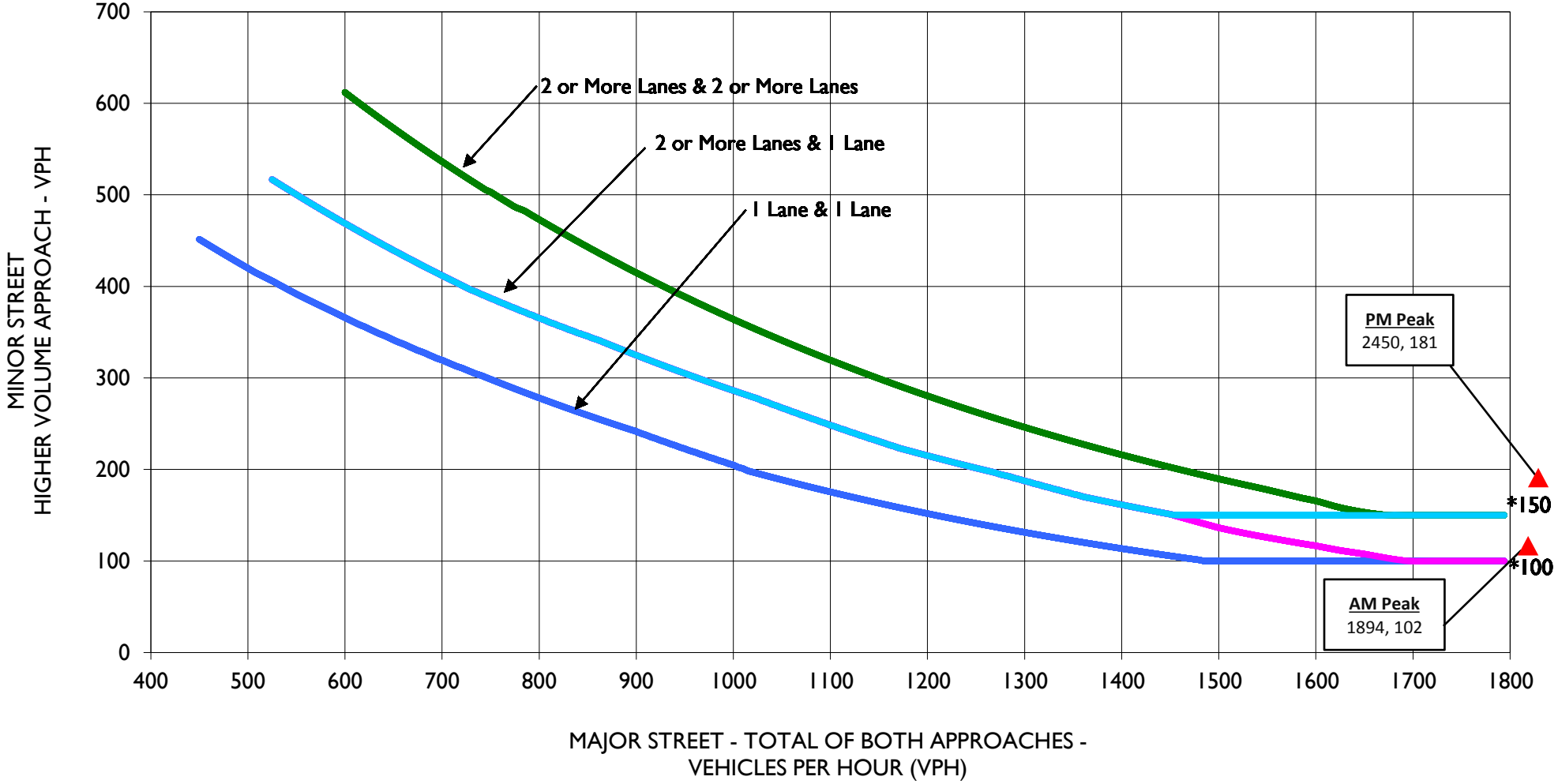
SATISFIED **YES** ☒ **NO** ☐

APPROACH LANES	One	2 or More	am peak	pm peak
Both Approaches - Major Street		x	1,894	2,450
Higher Approach - Minor Street	x		102	181

The plotted point falls above the curve in Figure 4C-3.	YES ☒	NO ☐
OR, The plotted point falls above the curve in Figure 4C-4.	YES ☐	NO ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-3 Warrant 3
Project Driveway (South) and Los Angeles Street
AM (PM) Peak hour Traffic Signal Warrant Based on
California Manual on Uniform Traffic Control Devices, 2014
Existing Conditions



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

LEGEND
▲ Los Angeles Street (2 Lane Major Street)
Project Driveway (1 Lane Minor Street)

Peak Hour Volumes Satify Warrants? YES

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