LDK Warehouse Project
Recirculated Initial Study
Mitigated Negative Declaration

SCH: 2018102050

Lead Agency:
City of Vacaville
Community Development
Department, Planning Division
650 Merchant Street
Vacaville, California 95688

Technical Assistance:
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March 4, 2019

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1.0 SUMMARY OF RECIRCULATED ISMND

INTRODUCTION

An Initial Study/Mitigated Negative Declaration (ISMND) was prepared for the LDK Warehouse Project (proposed project) and was circulated for a 30-day public review period from October 19, 2018 through November 19, 2018, consistent with CEQA regulations and guidelines. Copies of the document were distributed to the State Clearinghouse. Regional agencies, local agencies, and interested organizations and individuals were notified that the ISMND was available for review, in accordance with the City's noticing requirements. Letters of comment on the ISMND were received from one state agency (California Department of Transportation) and on behalf of one local labor union (received from Lozeau Drury, LLP on behalf of Laborers International Union of North America Local Union 324 and its members living and working in and around Vacaville). State CEQA Guidelines section 15073.5 requires a lead agency to recirculate an ISMND when the document must be substantially revised after public notice of its availability has previously been given, but prior to its adoption. A substantial revision is defined by the CEQA Guidelines section 15073.5 as one of the following:

1. A new, avoidable significant effect is identified and mitigation measures or project revisions must be added in order to reduce the effect to insignificance, or

2. 2. The lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less than significance and new measures or revisions must be required.

Upon review by City staff, it was determined that additional analyses were warranted, resulting in preparation of this Recirculated ISMND, in accordance with State CEQA Guidelines section 15073.5. Changes to the text of the ISMND are identified with strikethrough for deleted text and underline for new text. The Recirculated ISMND consists of the Revisions to the ISMND (Section 3.0), the ISMND (Appendix A), and revised traffic study (Appendix B).

LEAD AGENCY CONTACT

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CEQA AND PUBLIC AGENCY REVIEW

CEQA requires that project proponents disclose the significant impacts to the environment from proposed development projects. The intent of CEQA is to foster good planning and to consider environmental issues during the planning process. The City of Vacaville (City) is the Lead Agency under CEQA for the preparation of this Recirculated ISMND. The CEQA Guidelines (Section 21067) define the Lead Agency as: "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment." Approval of the proposed project is considered a public agency discretionary action, and therefore the proposed project is subject to compliance with CEQA. The City has directed the preparation of an analysis to comply with CEQA.

Stantec has prepared this document at the direction of the City. The purpose of this document is to disclose the environmental consequences of implementing the proposed project to decision-makers and the public. The public, City residents, and other local and State resource agencies will be given the opportunity to review and comment on this document during a 30-day public-review period. At the end of the review period, the City Planning Director will consider the LDK Warehouse Project, this Recirculated ISMND, and responses to all comments received during both the original and recirculated review periods, per the City's ministerial approval process.

The public review period will commence on March 4, 2019 and end on April 2, 2019, pursuant to CEQA Guidelines Section 15105. If you wish to send written comments (including via e-mail), they must be received by 5 p.m. on April 2, 2019. Written comments should be addressed to:

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The Recirculated ISMND and supporting documents are available at the City of Vacaville, Community Development Department, located at 650 Merchant Street Vacaville, California 95688, and online at the following URL: http://bit.ly/LDKW18-028

2.0 BACKGROUND & PROJECT DESCRIPTION

Background information and the Project Description for the proposed project did not change from release of the LDK Warehouse Project ISMND on October 19, 2018 to Recirculation of the ISMND on March 4, 2019. The following is a description of the proposed project background and Project Description, as presented in the October 19, 2018 ISMND.

PROJECT OVERVIEW

The LDK Warehouse Project involves the construction and operation of a warehouse distribution center in the City of Vacaville's (City's) Interchange Business Park Policy Plan area. The proposed project would involve the development of three single-story warehouse buildings, Building 1, Building 2a, and Building 2b, with associated parking, access roads, landscaping, and installation of utilities on four parcels. The project site would be on 68.90 acres, consisting of assessor's parcel numbers (APNs) 106-240-210, 106-240-340, 106-240-350, and 106-240-360. The proposed project would adjust the northern lot line approximately 20 feet south from Midway Road. Construction of Building 2a and Building 2b would require the rerouting of approximately 2,025 feet of the Solano Irrigation District (SID) Canal within a 48-inch pipe. The pipe would be located within a new 25-foot ROW and would generally extend east to west north of Building 2a and Building 2b and south to connect with the southern bank of the existing SID Canal. The proposed project is summarized as follows:

- **Building 1.** Building 1 would consist of one 617,760-square-foot warehouse on 42.5 acres of the project site. The proposed warehouse would be single-story building that would include122 dock-high doors, 20 knock-out doors, 4 grade-level doors, and 28,080 square feet of office space. A 178,030-square-foot parking area would be located on the east side of the building, and a 39,084-square-foot trailer parking area would be located on the north and west sides of the building. The parking area would provide 502 automobile surface parking spaces and 233 trailer parking spaces. The total landscape area for Building 1 would be approximately 95,893 square feet.

- **Building 2a.** Building 2a would consist of one 33,696-square-foot warehouse building on 3.2 acres. This proposed warehouse would be a single-story building and would include 10 dock-high doors, 1 knock-out door, 1 grade-level door, and 2,704-square-feet of office space. A 10,805 square foot parking area would be located on the west side of the building. The parking area would provide 38 automobile surface parking spaces. The combined landscape area for Buildings 2a and 2b would be approximately 81,436 square feet.

- **Building 2b.** Building 2b would consist of one 93,240-square-foot warehouse building on 5.2 acres. The proposed warehouse would be a single-story building and would include 24 dock-high doors, 4 knock-out doors, 2 grade-level doors, and two 5,520-square-foot office spaces totaling 11,040 square feet. A 40,170-square-foot parking area would be located on the west and east sides of the building. The parking area would provide 130 automobile surface parking spaces. The combined landscape area for Buildings 2a and 2 b would be approximately 81,436 square feet.

3.0 REVISIONS TO THE ISMND

SUBSTANTIAL REVISIONS

CEQA Guidelines Section 15073.5 advises that a Mitigated Negative Declaration must be recirculated for review and comment when the document must be "substantially revised" after public notice of its availability has previously been given pursuant to Section 15072, but prior to its adoption. Section 15073.5 further defines "substantial revision" as:

- A new, avoidable significant effect is identified, and mitigation measures or project revisions must be added in order to reduce the effect to insignificance, or
- The lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less than significance and new measures or revisions must be required.

The City of Vacaville (City) prepared an ISMND for the LDK Warehouse Project (proposed project) and circulated it for public review and comment from October 19, 2018 through November 19, 2018. Since circulation, the City has identified the project vicinity as an area of growth within the City and has identified the future need for a roundabout at Midway Road and the Interstate 505 (I-505) Northbound Ramps, immediately northeast of the project site. The City of Vacaville is currently updating its Capital Improvement Program and associated Traffic Impact Fees (TIF) program. When adopted, this program will include a pair of roundabouts at the I-505 / Midway Road interchange. These roundabouts would improve capacity and safety over the existing two-way stop-controlled interchange. The environmental impacts of the implementation of the roundabouts will be subsequently evaluated in the roundabout-project's environmental review, which will take place at a later time. As a result of this new information since circulation of the LDK Warehouse Project ISMND, the City has revised portions of the ISMND to clarify the extent of the proposed project, its potential environmental effects, and mitigation measures. Differences between the previous ISMND and the revised version include the following changes:

- Revised traffic study
- Disclosure of significant impact to the interchange of Midway Road and I-505 Northbound Ramps and new mitigation measure.
- Revised level of service (LOS) analysis for the 2035 With Project scenario.

The revisions to the ISMND are primarily related to updated traffic analysis to disclose avoidable significant impact to traffic and addition of a new mitigation measure. The revised traffic study reevaluated the LOS for 2035 With Project scenario (Cumulative Plus Project conditions). The City is thereby required to recirculate this revised version in order to offer the public an opportunity to fully review the changes. The City is releasing this Recirculated ISMND to the State Clearinghouse for review, providing the required local notice of availability, and sending a link to the electronic copy Recirculated ISMND directly

to those who commented on the October 2018 ISMND (California Department of Transportation, November 19, 2018; and, Lozeau Drury LLP, November 19, 2018).

This section presents specific text changes made to the ISMND since its publication and public review. The changes are identified by the ISMND page number. Text deletions are shown in ~~strikethrough~~, and text additions are shown in underline.

Page 3-147, 3.16, Environmental Checklist Items a) and b)

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	~~☐~~☒	~~☒~~☐	☐
b)	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	☐	~~☐~~☒	~~☒~~☐	☐

Page 3-151, Impact TRANS-1, Paragraph 2

The March 30, 2018 traffic study estimates that the proposed project would generate a total of 1,296 daily trips, 127 a.m. peak hour trips, and 141 p.m. peak hour trips. Based on the traffic study modeling, all five intersections studied would operate at LOS A for Existing Plus Project and Existing Plus Approved/Pending (Baseline) with Project scenarios. However, the Midway Road and I-505 Northbound Ramps interchange under the Year 2035 project conditions is expected to exceed City LOS thresholds both with and without the proposed project. ~~Even so, the addition of project traffic volumes does not result in an increase in more than 5 seconds of delay at this intersection; thus, the proposed project meets the City's criteria for impact significance.~~ Table 1 provides a summary of future plus project operating conditions at the study locations. As shown in the table, during the AM peak hour, Midway Road and the I-505 Northbound Ramps would operate at LOS D with average delay of 29.6 seconds without the proposed project and would degrade to LOS F with 62.0 seconds of delay with the proposed project. During the PM peak hour, this same intersection would operate at LOS F under both without and with project conditions. The City of Vacaville is currently updating its Capital Improvement Program and associated Traffic Impact Fees (TIF) program. When adopted, this program will include a pair of

roundabouts at the I-505/ Midway Road interchange. These roundabouts would improve capacity and safety over the existing two-way stop-controlled interchange. As required by Mitigation Measure TRANS-1, the Applicant would pay the fair share toward the installation of a roundabout at the Northbound Ramp intersection with Midway Road to mitigate the AM peak hour impact. This improvement would improve the level of service at this location to LOS B (with 15.1 seconds of average delay) during the AM peak hour and LOS B (with 10.6 seconds of average delay) during the PM peak hour, as shown in Table 2. Therefore, with addition of the roundabout, the proposed project would not significantly increase delay times at studied intersections, and the operational traffic impacts would be less than significant with mitigation.

Table 1: Future Intersection Operations (Without and With Project)

Location	Intersection Control	Future Without Project				Future With Project			
		AM		PM		AM		PM	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	29.6	D	**>90**	**F**	**62.0**	**F**	**>90**	**F**
Midway Road & I-505 Southbound Ramps	TWSC	10.6	B	8.6	A	16.6	C	11.9	B
Notes: TWSC = Two Way Stop Control Source: DKS 2019.									

Table 2: Future with Project Mitigated Intersection Operations

Location	Intersection Control	Future Without Project			
		AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	Roundabout	15.1	B	10.6	B
Source: DKS 2019.					

The State does not have a specific traffic threshold for implementing a left-turn lane. However, eastbound traffic along Midway Road currently exceeds 200 vehicles per hour under peak traffic conditions; this level of traffic warrants a left turn lane based on recommendations from the National Cooperative Highway Research Board (Appendix K). The proposed project would implement a two-way left turn lane along Midway Road in front of the project site. The two-way left turn lane would help the proposed project meet recommended traffic safety standards and reduce conflicts with tractor-trailers entering and exiting the project site.

The project site is not currently served by public transit, and the closest bus stop is located about 1.5 miles away from the project site. Project traffic is not expected to use roadways with existing bus stops

and would not impact bus service times. Therefore, the proposed project would not impact the City's local transit service. While there are currently no bicycle facilities in the project area, Class II bike paths are planned along Midway Road and Eubanks Drive. The proposed project would not modify or interfere with these facilities during construction or operation. Therefore, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The impact would be less than significant.

Page 3-152, Significance Determination

Level of Significance Before Mitigation

~~Less Than~~ Potentially Significant Impact.

Mitigation Measures

~~No mitigation is necessary.~~

MM TRANS-1: Fair Share. Prior to issuance of the building permit, the Applicant shall make a fair share contribution to the City to be allocated to an escrow account toward the installation of the roundabout at the interchange of Midway Road and Interstate 505 Northbound Ramps. Project-specific impacts for this improvement shall be evaluated in a subsequent environmental analysis to the satisfaction of the Director of the Department of Public Works.

Level of Significance After Mitigation

~~Less Than Significant Impact~~

Mitigation Measure TRANS-1 will account for collection of a fair share contribution fee toward the installation of a roundabout at the interchange of Midway Road and Interstate 505 Northbound Ramps, prior to issuance of a building permit. The environmental impacts of the implementation of Mitigation Measure TRANS-1 will be subsequently evaluated in the roundabout-project's environmental review, which will take place at a later time. As such, the level of significance after mitigation would be less than significant with mitigation.

Page 3-152, Impact TRANS-2, Paragraph 2

Additionally, the City has a General Plan goal of maintaining a "mid-range D" LOS at signalized intersections and a "D" LOS at two-way stop control intersections, but the City may allow temporary exceedance of this standard if future programmed improvements would improve performance (City of Vacaville 2015). As discussed in ~~the previous section~~ Impact TRANS-1, ~~project intersections would not experience increased delays of more than 5 seconds, so it would therefore meet the City's criteria for impact significance~~ the proposed project would be subject to payment of fair share towards future construction of a roundabout at the interchange of Midway Road and I-505 Northbound Ramps. Therefore, the proposed project would not conflict with applicable CMPs and would have a less than significant impact.

Level of Significance Before Mitigation

~~Less Than~~ Potentially Significant Impact.

Mitigation Measures

~~No mitigation is necessary~~ Mitigation Measure TRANS-1 is required.

Level of Significance After Mitigation

Less Than Significant ~~Impact~~ With Mitigation.

Page 3-176, Impact b)

The 2013 General Plan and ECAS EIR evaluated the cumulative effects associated with growth and development in the City. The proposed project would not result in any new cumulative impacts not previously identified in the General Plan and ECAS EIR. All cumulative impacts resulting from the proposed project related to aesthetics, air quality, geology, greenhouse gases, hazards, hydrology, ~~and~~ noise, and traffic would be mitigated with the implementation of Mitigation Measures AES-1, AIR-1, GEO-1, GHG-1, HAZ-1, HYD-1, ~~and~~ NOI-1, and TRANS-1.

UNSUBSTANTIAL REVISIONS

In addition to the substantial revisions that were made to the ISMND, additional revisions were made that are not considered substantial revisions, per the CEQA Guidelines section 15073.5, and have been made to clarify some changes that were made to the proposed project. For example, and as discussed above, the dates of the public review period have been updated to reflect the public review period for the Recirculated ISMND to commence on March 4, 2019 and end at 5 p.m. on April 2, 2019. Additionally, updates were made to the environmental factor checkboxes in Section 3.0, marking the Transportation/Traffic box with a checkmark, indicating that the Transportation/Traffic resource would be potentially affected by the proposed project, involving at least one impact that requires mitigation to reduce the impact from “Potentially Significant” to “Less Than Significant with Mitigation”.

Furthermore, The City of Vacaville has determined that a) all potentially significant or significant impacts required to be identified in the Recirculated ISMND have been identified and analyzed; and b) with respect to each significant impact on the environment either of the following apply: 1) changes or alterations have been required in or incorporated into the proposed project that avoid or mitigate the significant impacts to a level of less than significant; or 2) those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency. The Recirculated ISMND and supporting documents are available at the City of Vacaville Community Development Department, located at 650 Merchant Street Vacaville, California 95688, and online by searching the project name at: http://bit.ly/LDKW18-028. Regional agencies, local agencies, and interested organizations and individuals were notified that the Recirculated ISMND is available for review, in accordance with the City’s noticing requirements.

LDK Warehouse Project

Administrative Draft
Initial Study Mitigated Negative Declaration

File No. 18-028

Lead Agency
City of Vacaville
Community Development Department, Planning Division
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Technical Assistance:
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October 19, 2018

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Acronyms and Abbreviations

AB	Assembly Bill
ABAG	Association of Bay Area Governments
ADA	Americans Disabilities Act
APN	Assessor's Parcel Number
BAU	Business-As-Usual
bgs	below ground surface
BMP	best management practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CalRecycle	California Department of Resources Recycling and Recovery
CARB	California Air Resources Board
CBC	California Building Code
CCA	Coalition for Clean Air
CCR	California Code of Regulations
CDC	California Department of Conservation
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CGS	California Geological Survey
CHRIS	California Historical Resources Information System
CH_4	methane
City	City of Vacaville
CMA	Congestion Management Agency
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranking
dB	decibel
dBA	A-weighted sound level
DTSC	Department of Toxic Substances Control
DWQ	Department of Water Quality
ECAS	Energy Conservation Action Strategy
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FAR	floor area ratio
FEMA	Federal Emergency Management Agency

FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FMMP	Farmland Mapping and Monitoring Program
FP	Fully Protected
FTA	Federal Transit Administration
General Plan	City of Vacaville General Plan
General Plan EIR	General Plan and Energy Conservation Action Strategy Environmental Impact Report
GHG	greenhouse gas
Gpd	gallons per day
GWP	global warming potential
HCP	Habitat Conservation Plan
I-80	Interstate 80
I-505	Interstate 505
IPaC	Information for Planning and Conservation
ISMND	Initial Study Mitigated Negative Declaration
ITE	Institute of Transportation Engineers
LCFS	Low Carbon Fuel Standard
Ldn	day/night sound level
Lmax	maximum instantaneous noise level
LOS	level of service
LUST	Leaking Underground Storage Tank
MBTA	Migratory Bird Treaty Act
mgd	million gallons per day
MLD	most likely descendant
MRZ	Mineral Resource Zone
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NOA	naturally occurring asbestos
NOI	Notice of Intent
NOx	nitrogen oxide
NO_2	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NWIC	Northwest Information Center
N_2O	nitrous oxide
O_3	Ozone
Pb	lead
PFC	perfluorinated chemical
Phase I	Phase I Environmental Site Assessment

PM	Particulate Matter
$PM_{2.5}$	particulate matter (2.5 microns and less in diameter)
PM_{10}	particulate matter (10 microns and less in diameter)
p.p.v	peak particle velocity
PRC	Public Resources Code
PRD	Permit Registration Documents
PVC	Polyvinyl chloride
RCNM	Roadway Construction Noise Model
ROG	reactive organic gas
ROW	right-of-way
RWQCB	Regional Water Quality Control Board
SBF	Sanitary Base Flow
SCDEM	Solano County Department of Environmental Management
SCWA	Solano County Water Agency
sf	square feet
SF_6	sulfur hexafluoride
SID	Solano Irrigation District
SIP	State Implementation Plan
SMAQMD	Sacramento Metro Air Quality Management District
SO_2	sulfur dioxide
SSC	species of special concern
STA	Solano Transportation Authority
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TMDL	Total Max Daily Load
TNM	Traffic Noise Model
TWSC	two-way stop control
USACE	United States Army Corp of Engineers
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UWMP	Urban Water Management Plan
VFD	Vacaville Fire Department
VPD	Vacaville Police Department
WWTP	Wastewater Treatment Plan
YSAQMD	Yolo-Solano Air Quality Management District

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INITIAL STUDY MITIGATED NEGATIVE DECLARATION

PROJECT TITLE:

LDK Warehouse Project

PROJECT DESCRIPTION:

The LDK Warehouse Project (proposed project) involves the construction and operation of a warehouse distribution center in the City of Vacaville's (City's) Interchange Business Park Policy Plan area. The proposed project would involve the development of three single-story warehouse buildings, Building 1, Building 2a, and Building 2b, with associated parking, access roads, landscaping, and installation of utilities on four parcels. The project site would be 68.90-acres, consisting of assessor's parcel numbers (APNs) 106-240-210, 106-240-340, 106-240-350, and 106-240-360. The proposed project would adjust the north lot line approximately 20 feet south from Midway Road, the south lot line immediately south of Building 1 south approximately 850 feet, at the furthest point, and the west lot line would be adjusted approximately 100 feet east. The existing Parcel B would be subdivided into three separate parcels (Figure 2.0-2). Construction of Building 2a and Building 2b would require the re-route of approximately 2,025-feet of the Solano Irrigation District (SID) Canal within a 48-inch pipe. The pipe would be located within a new 25-foot right-of-way (ROW), and generally extend west to east, north of Building 2a and Building 2b and south to connect with the southern bank of the existing SID canal.

PROJECT LOCATION:

The proposed project is located in northwest Vacaville, west of Interstate-505 (I-505) in the City's Interchange Business Park Policy Plan area. The proposed project would be located on APN 106-240-340 and APN 106-240-350 along Midway Road and Eubanks Drive, north of the former SaveMart Distribution Center.

NAME OF LEAD AGENCY:

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650 Merchant Street
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NAME OF AGENCY CARRYING OUT PROJECT:

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Vacaville, California 95688

REQUIRED FINDINGS:

The City of Vacaville has determined that a) all potentially significant or significant impacts required to be identified in the Initial Study Mitigated Negative Declaration (ISMND) have been identified and analyzed; and b) with respect to each significant impact on the environment either of the following apply: 1) changes or alterations have been required in or incorporated into the proposed project that avoid or mitigate the significant impacts to a level of less than significant; or 2) those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency. The ISMND and supporting documents are available at the City of Vacaville Community Development Department, located at 650 Merchant Street Vacaville, California 95688, and online by searching the project name at: http://bit.ly/LDKW18-028

By: Peyman Behvand
Peyman Behvand, City Planner

Date: October 18, 2018

1.0 INTRODUCTION

1.1 PROJECT TITLE

LDK Warehouse Project (proposed project)

1.2 LEAD AGENCY

City of Vacaville
Community Development Department, Planning Division
650 Merchant Street
Vacaville, California 95688

1.3 LEAD AGENCY CONTACT

Peyman Behvand, City Planner
Community Development Department
Planning Division
650 Merchant Street
Vacaville, California 95688
Phone: (707) 449-5332
Email: peyman.behvand@cityofvacaville.com

1.4 PURPOSE

The purpose of the proposed project is to construct and operate a warehouse distribution center in the City of Vacaville's (City's) Interchange Business Park Policy Plan area. This Draft Initial Study Mitigated Negative Declaration (ISMND) has been prepared to evaluate the proposed project for potential environmental effects in compliance with the California Environmental Quality Act (CEQA). The City is the lead agency under CEQA and has the principal responsibility for carrying out or approving a project which that may have a significant effect on the environment. This ISMND has been prepared in anticipation of determining that all potentially significant impacts from implementing the proposed project can be mitigated to less than significant levels. This document has been prepared in accordance with CEQA, Public Resources Code (PRC) Section §21000 et seq., and the State CEQA Guidelines, California Code of Regulations (CCR), Title 14, Section §15000 et seq.

1.5 PROJECT LOCATION

The proposed project is in northwest Vacaville west of Interstate 505 (I-505) in the City's Interchange Business Park Policy Plan area (Figure 2.0-1). The proposed project would be located on assessor's parcel number (APN) 106-240-210, 106-240-340, 106-240-350, and 106-240-360, south of Midway Road and north of the former SaveMart Distribution Center (Figure 2.0-2).

1.6 LAND USE DESIGNATION

The General Plan designates the northern portion of the project site (generally north of Gibson Canyon Creek) Commercial Office and the southern portion (generally south of Gibson Canyon Creek) of the project site Industrial Park.

1.7 SUMMARY OF PROJECT

The proposed project involves the construction and operation of a warehouse distribution facility in the City's Interchange Business Park Policy Plan Area. The proposed project would involve the construction of three single-story warehouse buildings, Building 1, Building 2a, and Building 2b, with associated parking, access roads, landscaping, and installation of utilities. The 68.90-acre project site would adjust the north lot line approximately 20 feet south from Midway Road, the south lot line immediately south of Building 1 would be adjusted south approximately 850 feet, at the furthest point, and the west lot line would be adjusted approximately 100 feet east. The existing Parcel B would be subdivided into three separate parcels (Figure 2.0-2). In addition, the proposed project would require the Solano Irrigation District (SID) Canal lot line be adjusted approximately 336 feet north.

Construction of Building 2a and Building 2b would require the rerouting of approximately 2,025 feet of the SID Canal within a 48-inch pipe. The pipe would be located within a new 25-foot right-of-way (ROW), generally running west to east, north of Building 2a and Building 2b and south to the southern bank of the existing SID Canal. The Solano Irrigation District would "quitclaim" its current easement within the project site and maintain the new 25-foot ROW.

1.8 EXISTING SETTING AND SURROUNDING LAND USES

The project site is in the City's Interchange Business Park Policy Plan area, an area designated for large-scale manufacturing, research, wholesale, and storage uses. The project site is undeveloped except for the southeast portion of the project site, which contains the covered trailer parking area for the former SaveMart Distribution Center. The SID Canal and Gibson Canyon Creek are in the northern portion of the project site and generally extend west to east across the project site. Land uses surrounding the project site include the following:

- **North.** Midway Road forms the northern boundary of the project site and Vacaville's city limit, beyond which lie low-density single-family residences. These single-family residences are located outside of the City's sphere of influence and are zoned as Rural Residential by Solano County. A joint gas station, country store, and saloon, zoned Highway Commercial by Solano County, are located east of these residences.

- **South.** South of the project site is the former SaveMart Distribution Center beyond which lies the Mariani Packing Facility. These facilities are located within Area III of the City's Industrial Business Park Policy Plan (City of Vacaville 2017). These areas are zoned Industrial Park by the City.

- **West.** Eubanks Drive is located west of the project site, beyond which lie undeveloped lands that are zoned Industrial Park. The Putah South canal is approximately 0.4 mile west of the project site. Low-density single-family residences are located west of the canal. These residences are located outside of the City's sphere of influence and are zoned Rural Residential by the County.

- **East.** I-505 is immediately east of the project site.

1.9 CEQA AND PUBLIC AGENCY REVIEW

CEQA requires that project proponents disclose the significant impacts to the environment from proposed development projects. The intent of CEQA is to foster good planning and to consider environmental issues during the planning process. The City is the Lead Agency under CEQA for the preparation of this ISMND. The CEQA Guidelines (Section 21067) define the Lead Agency as: "the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment." Approval of the proposed project is considered a public agency discretionary action, and therefore the proposed project is subject to compliance with CEQA. The City has directed the preparation of an analysis to comply with CEQA.

Stantec has prepared this document at the direction of the City. The purpose of this document is to disclose the environmental consequences of implementing the proposed project to decision-makers and the public. The public, City residents, and other local and State resource agencies will be given the opportunity to review and comment on this document during a 30-day public-review period. Comments received during the review period will be considered by the City prior to certification of this ISMND and project approval.

The public review period will commence on October 19, 2018 and end on November 19, 2018, pursuant to CEQA Guidelines Section 15105. If you wish to send written comments (including via e-mail), they must be received by 5 p.m. on November 19, 2018. Written comments should be addressed to:

Peyman Behvand, City Planner
Community Development Department
Planning Division
650 Merchant Street
Vacaville, California 95688
Phone: (707) 449-5410
Email: peyman.behvand@cityofvacaville.com

The ISMND and supporting documents are available at the City of Vacaville, Community Development Department, located at 650 Merchant Street Vacaville, California 95688, and online at the following URL: http://bit.ly/LDKW18-028

1.10 REQUIRED PERMITS AND APPROVALS

This ISMND would be used by the City as the Lead Agency to evaluate the potential environmental impacts of the proposed project. The applicant is requesting approval of the following applications: (1) Tentative Map; and (2) Design Review. Other anticipated project approvals/actions may include, but are not limited to, the following:

- Lot Line Adjustments: City of Vacaville
- Design Review: City of Vacaville
- Tentative Map: City of Vacaville
- Tree Removal Permit: City of Vacaville
- Adoption of the Mitigated Negative Declaration: City of Vacaville
- National Pollutant Discharge Elimination System Permit: Regional Water Quality Control Board
- Section 1600 Lake or Streambed Alteration Agreement: California Department of Fish and Wildlife
- Clean Water Act Section 404 permit: US Army Corps of Engineers
- Clean Water Act Section 401 water quality certification: Regional Water Quality Control Board

Other ministerial approvals such as building-related permits, Tree Removal Permit, and Encroachment Permits are also anticipated. Additionally, all work related to improvements and project grading would be subject to the City of Vacaville Municipal Code, including the Zoning Ordinance, Building Code, and Fire Code.

1.11 SCOPE OF THIS INITIAL STUDY

As the Lead Agency under CEQA, the City is responsible for compliance with the environmental review process prescribed by the CEQA Guidelines. This Initial Study focuses on the environmental issues identified as potentially significant in the CEQA checklist and by the CEQA Guidelines. This Initial Study evaluates the potentially significant effects on the environment and identifies revisions in the project site plans (presented as mitigation measures) to mitigate the effects to a level at which no significant effect on the environment would occur. A complete project description is included in Section 2.0. Project elements and environmental resources are analyzed in Section 3.0, and references are provided in Section 4.0.

The following technical studies were conducted and/or reviewed in preparing this ISMND: air quality modeling outputs, biological resources assessment, aquatic resources delineation, geotechnical study, cultural resources study, phase I, traffic impact study, and noise modeling.

These studies and supporting data are included as appendices to this ISMND and referred to where appropriate throughout this document.

1.12 DOCUMENT ORGANIZATION

This ISMND is organized as follows:

Section 1.0: Introduction. This section introduces the proposed project and describes the purpose and organization of this document.

Section 2.0: Project Description. This section describes the purpose and need for the proposed project, identifies project objectives, and provides a detailed description of the project.

Section 3.0: Environmental Checklist and Environmental Evaluation. This section presents an analysis of the range of environmental issues identified in the CEQA Environmental Checklist and determines for each topic whether the proposed project would result in no impact, a less than significant impact, a less than significant impact with mitigation incorporated, or a potentially significant impact. If impacts are determined to be potentially significant after incorporation of applicable mitigation measures, an Environmental Impact Report (EIR) would be required. For this project, however, mitigation measures have been incorporated, where needed, that would reduce all potentially significant impacts to a less than significant level.

Section 4.0: References. This section lists the references used in preparing this ISMND.

Section 5.0: List of Preparers. This section identifies the report preparers.

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2.0 PROJECT DESCRIPTION

2.1 PROJECT OVERVIEW

The LDK Warehouse Project involves the construction and operation of a warehouse distribution center in the City's Interchange Business Park Policy Plan area (Figure 2.0-1). The proposed project would involve the development of three single-story warehouse buildings, Building 1, Building 2a, and Building 2b, with associated parking, access roads, landscaping, and installation of utilities on four parcels. The project site would be on 68.90 acres, consisting of APNs 106-240-210, 106-240-340, 106-240-350, and 106-240-360. The proposed project would adjust the northern lot line approximately 20 feet south from Midway Road. Construction of Building 2a and Building 2b would require the rerouting of approximately 2,025 feet of the SID Canal within a 48-inch pipe. The pipe would be located within a new 25-foot ROW and would generally extend east to west north of Building 2a and Building 2b and south to connect with the southern bank of the existing SID Canal. The project site, project site plans, and project elevations are presented in Figure 2.0-2 through Figure 2.0-10. The proposed project is summarized as follows and is further described in the following subsections.

- **Building 1.** Building 1 would consist of one 617,760-square-foot warehouse on 42.5 acres of the project site. The proposed warehouse would be single-story building that would include122 dock-high doors, 20 knock-out doors, 4 grade-level doors, and 28,080 square feet of office space. A 178,030-square-foot parking area would be located on the east side of the building, and a 39,084-square-foot trailer parking area would be located on the north and west sides of the building. The parking area would provide 502 automobile surface parking spaces and 233 trailer parking spaces. The total landscape area for Building 1 would be approximately 95,893 square feet.

- **Building 2a.** Building 2a would consist of one 33,696-square-foot warehouse building on 3.2 acres. This proposed warehouse would be a single-story building and would include 10 dock-high doors, 1 knock-out door, 1 grade-level door, and 2,704-square-feet of office space. A 10,805 square foot parking area would be located on the west side of the building. The parking area would provide 38 automobile surface parking spaces. The combined landscape area for Buildings 2a and 2b would be approximately 81,436 square feet.

- **Building 2b.** Building 2b would consist of one 93,240-square-foot warehouse building on 5.2 acres. The proposed warehouse would be a single-story building and would include 24 dock-high doors, 4 knock-out doors, 2 grade-level doors, and two 5,520-square-foot office spaces totaling 11,040 square feet. A 40,170-square-foot parking area would be located on the west and east sides of the building. The parking area would provide 130 automobile surface parking spaces. The combined landscape area for Buildings 2a and 2 b would be approximately 81,436 square feet.

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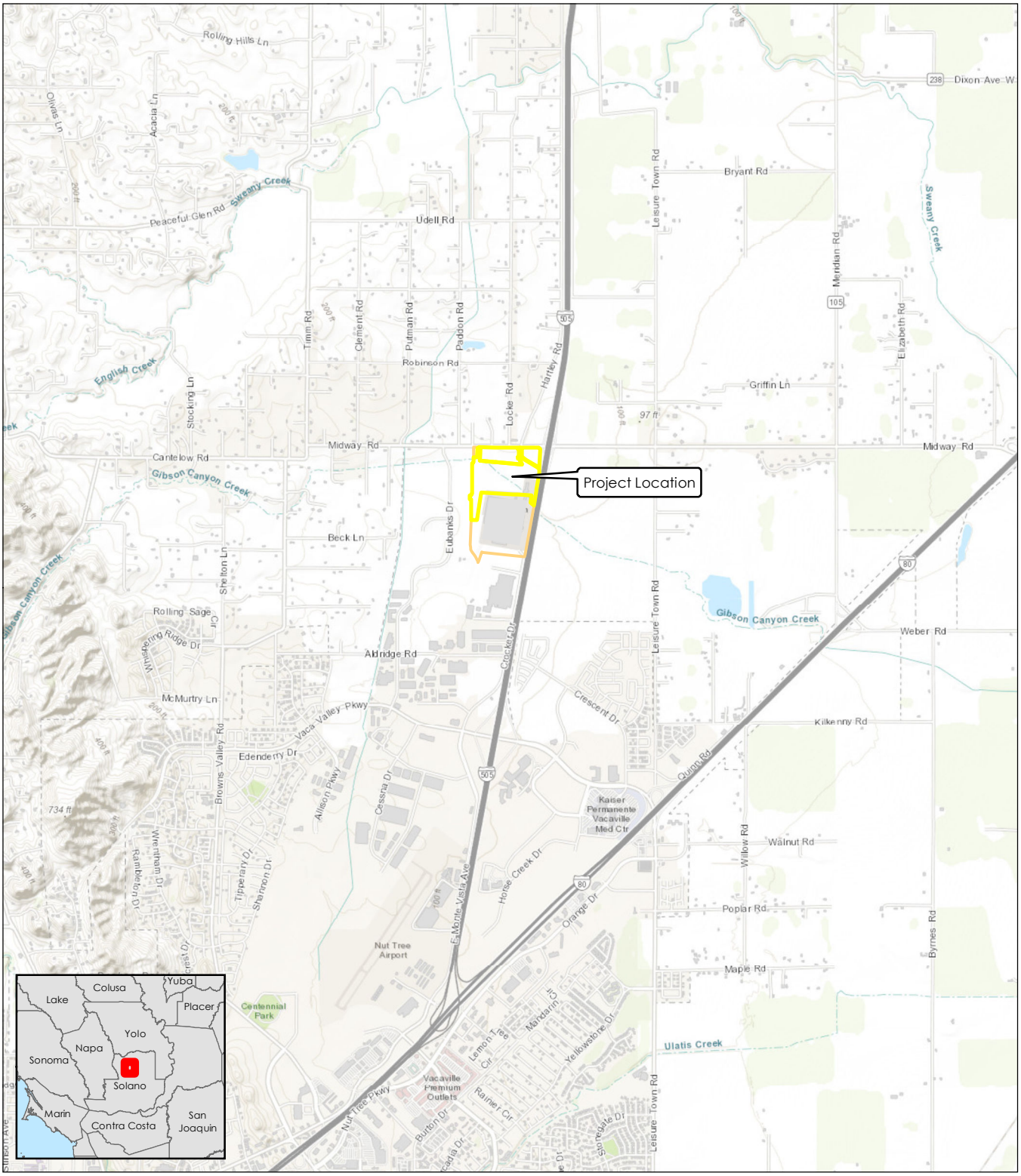

N

0 2,500 5,000
Feet

1:5,000,000 (at original document size of 8.5x11)

Stantec

City of Vacaville
LDK Warehouse Project

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Figure 2.0-1: Regional Project Location

N

0 500 1,000

Feet

1:10,000 (at original document size of 8.5x11)

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Legend

- Parcel A
- Parcel B
- Proposed Staging Area*

*Locations of proposed staging areas are approximate.

City of Vacaville
LDK Warehouse Project

Figure 2.0-2: Project Area

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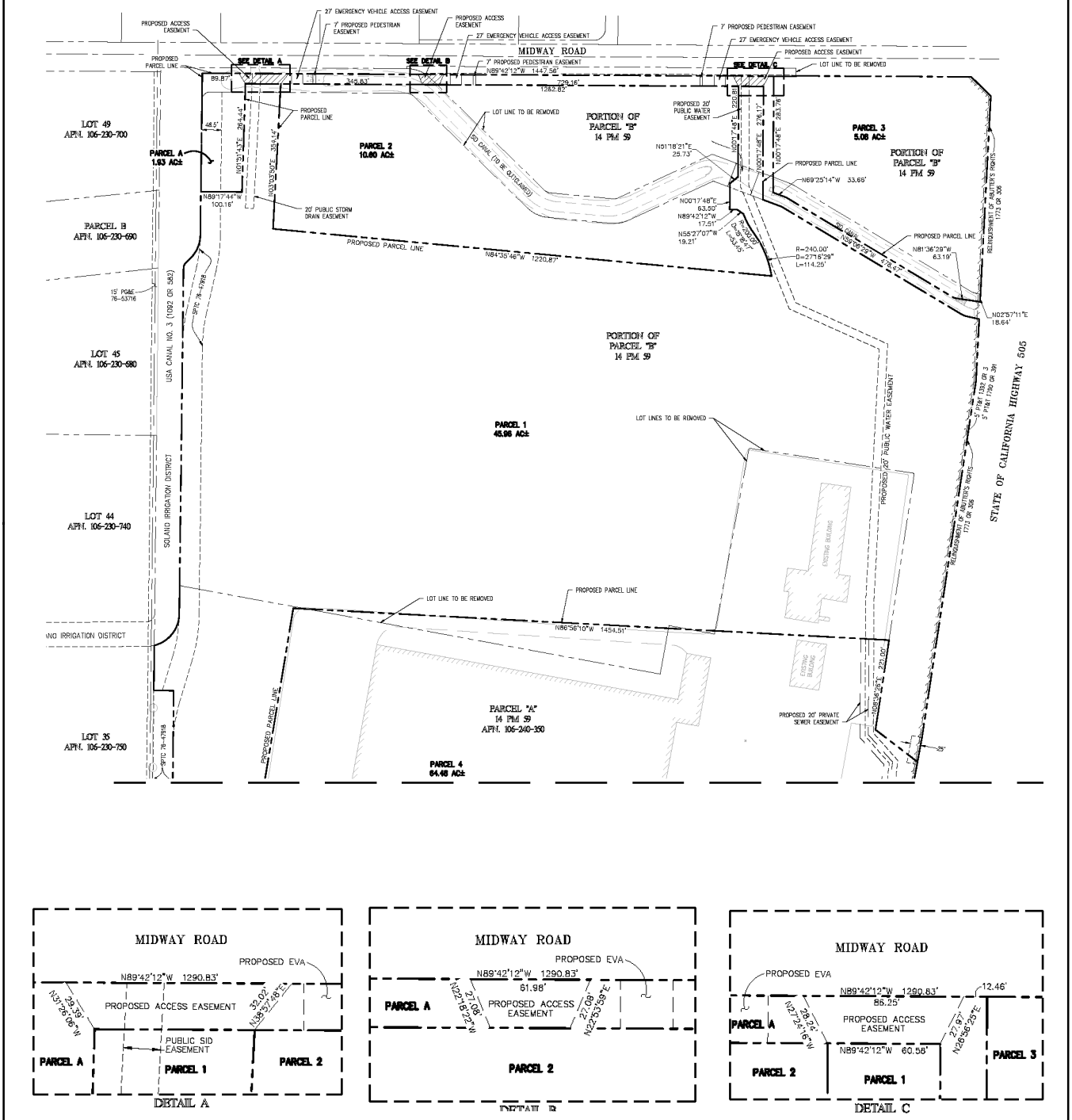

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Figure 2.0-3: Tentative Parcel Map

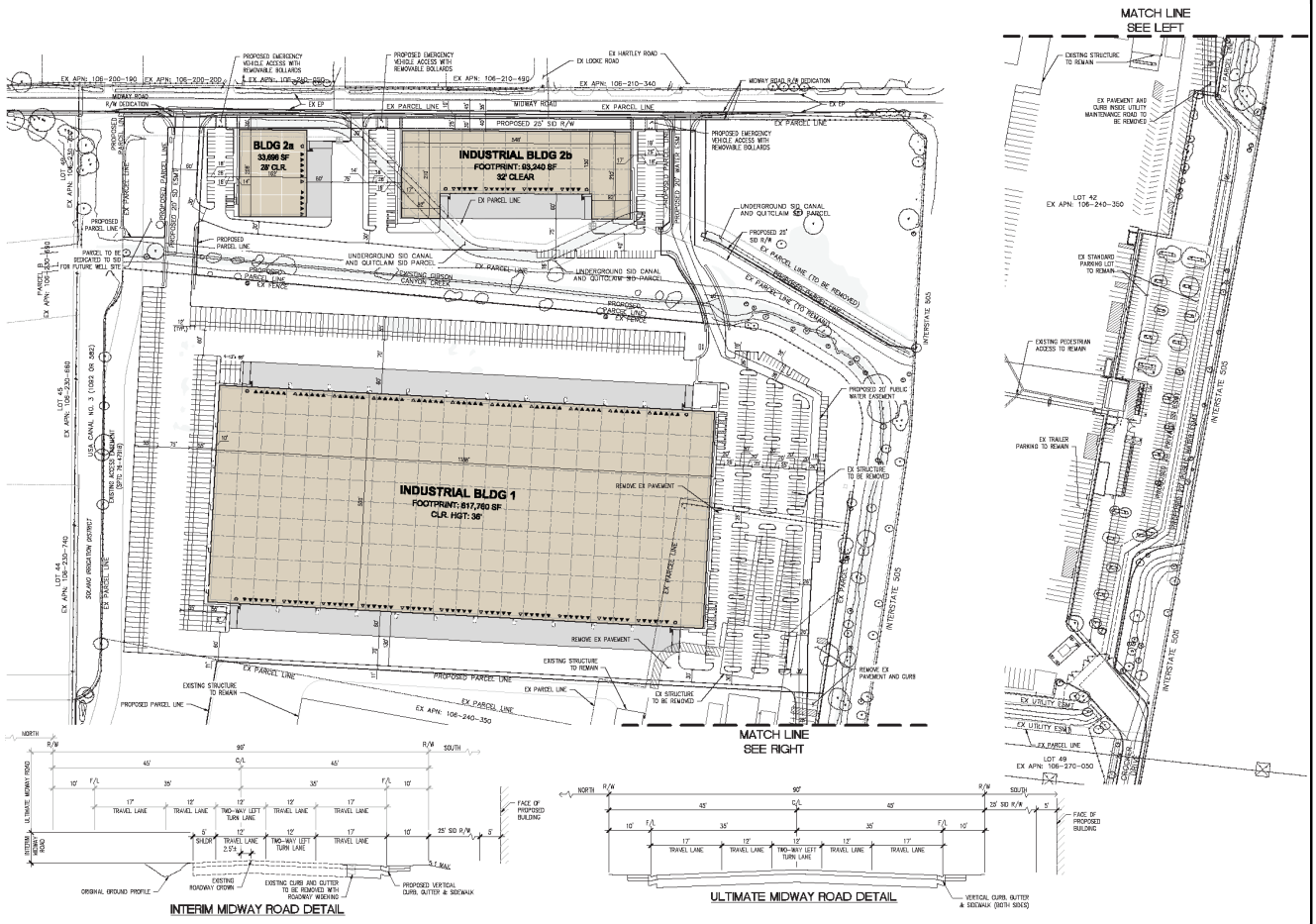

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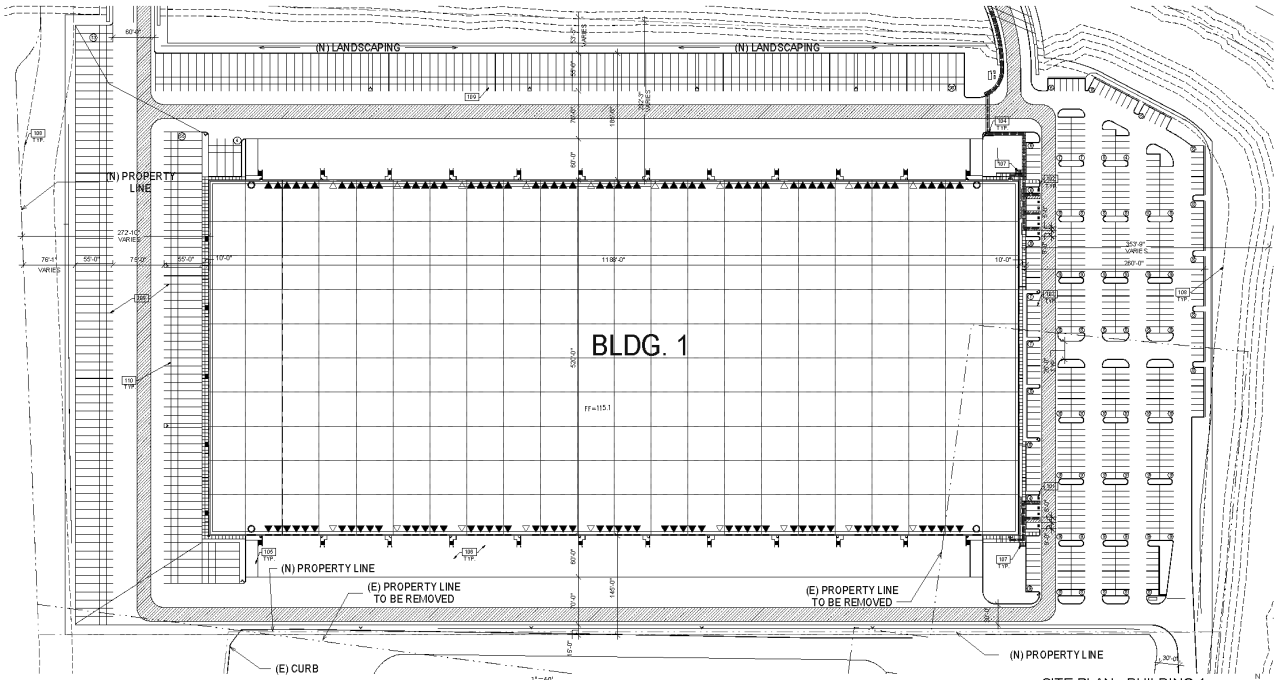
Figure 2.0-4: Project Site Plan



SITE LEGEND

FIRE LANE (HATCHED)

PARKING STALL COUNT TOTAL

DOCK HIGH TRUCK DOOR

GRADE LEVEL TRUCK DOOR

FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)

PROPERTY LINE

SCOPE OF WORK LIMIT

NOTES

SEE SHEET A0.2 FOR GENERAL NOTES.

101. ACCESSIBLE PARKING STALL WITH SIGNAGE.
102. VAN ACCESSIBLE PARKING STALL WITH SIGNAGE.
103. PAINTED PARKING STRIPING PER CITY STANDARDS. 2'-0" PARKING OVERHANG.
104. TRASH ENCLOSURE WITH RECYCLE BIN.
105. ACCESSIBLE CURB RAMP WITH TRUNCATED DOMES.
106. CONCRETE RAMP.
107. CONCRETE PAVEMENT.
108. BIKE RACK.
109. EASEMENT LINE.
110. CURB.

N

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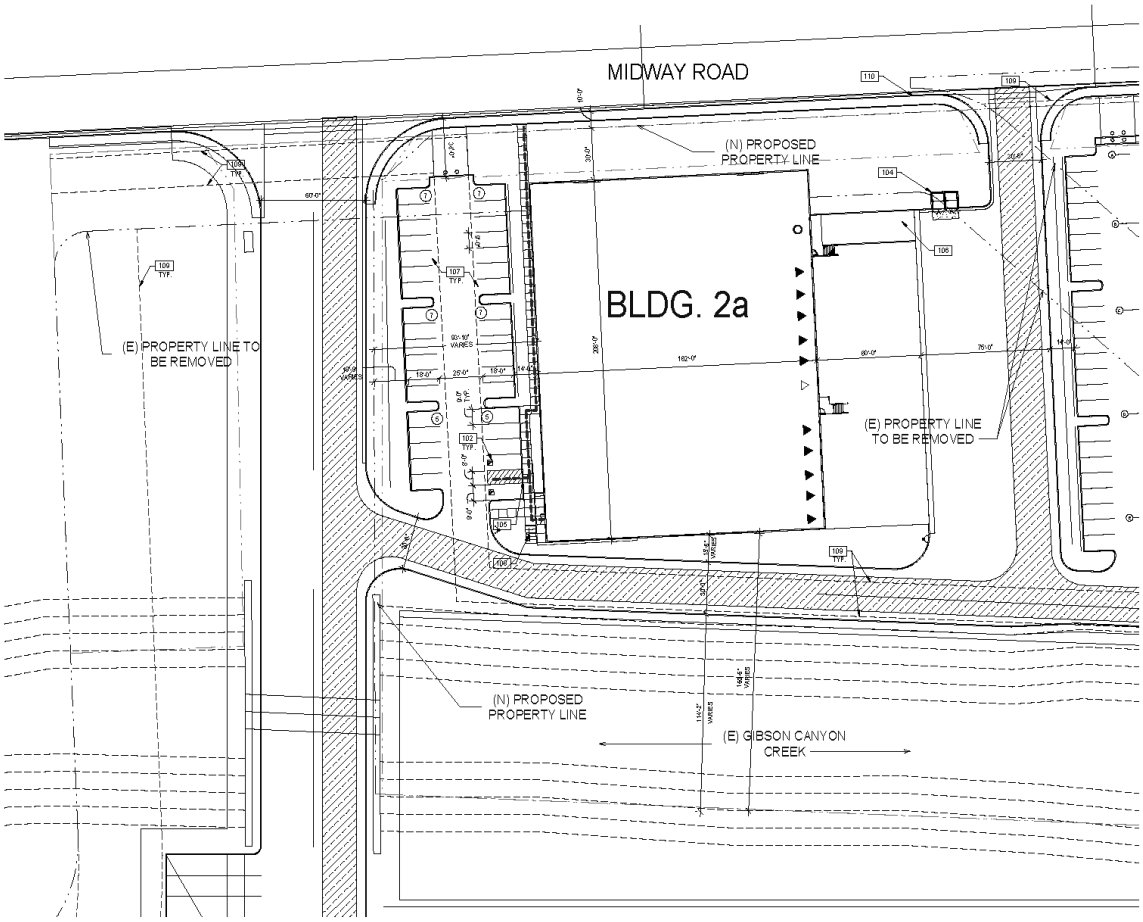
Figure 2.0-5: Project Site Plan - Building 1



SITE LEGEND

FIRE LANE (HATCHED)

PARKING STALL COUNT TOTAL

DOCK HIGH TRUCK DOOR

GRADE LEVEL TRUCK DOOR

FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)

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N

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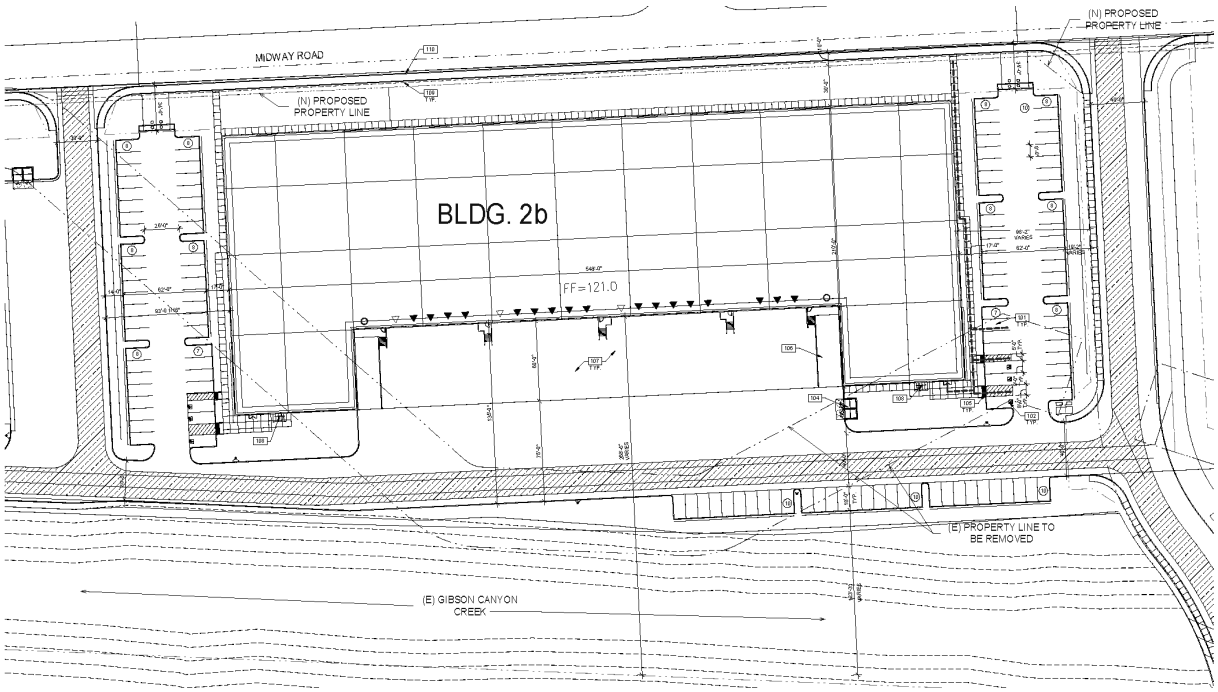
Figure 2.0-6: Project Site Plan - Building 2a



SITE LEGEND

FIRE LANE (HATCHED)

PARKING STALL COUNT TOTAL

DOCK HIGH TRUCK DOOR

GRADE LEVEL TRUCK DOOR

FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)

PROPERTY LINE

SCOPE OF WORK LIMIT

NOTES

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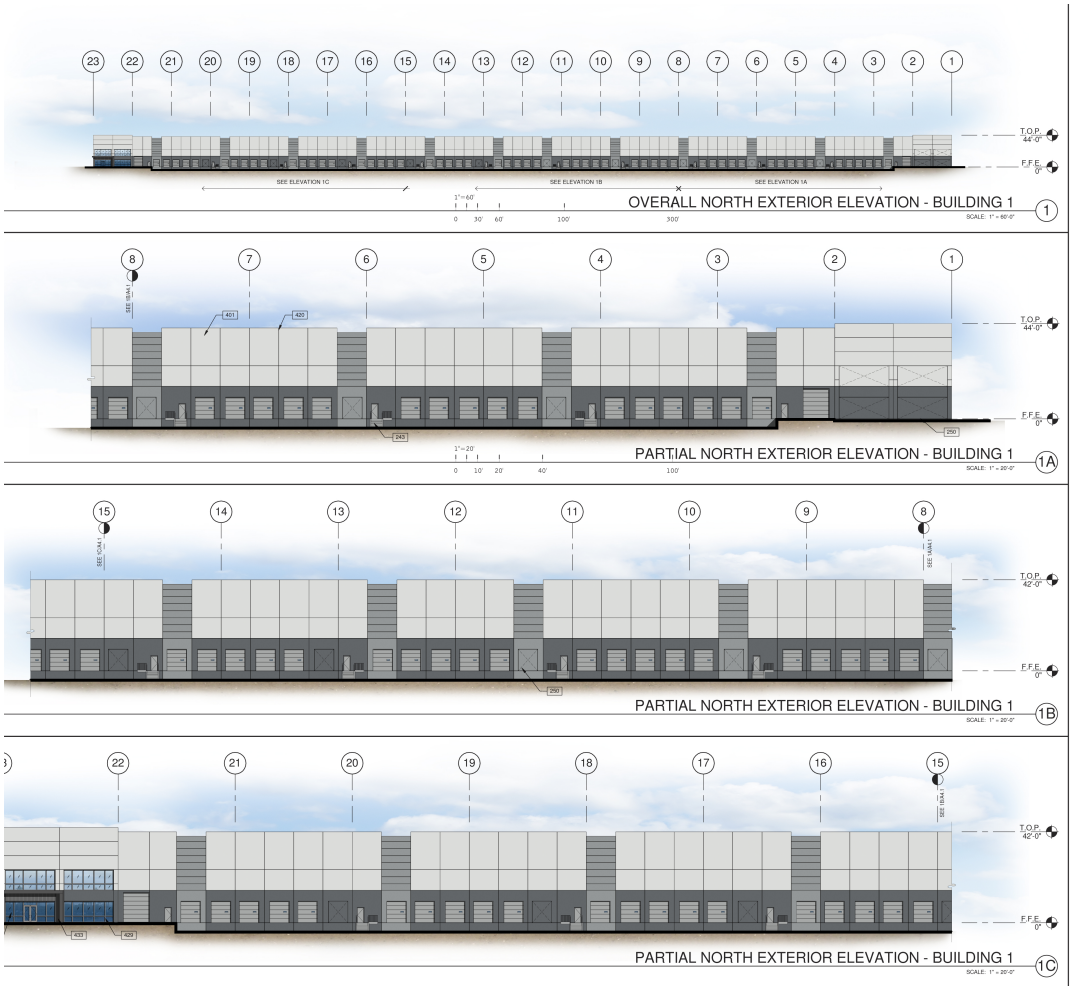
Figure 2.0-7: Project Site Plan - Building 2b



243 EXTERIOR STEEL STAIR, ALL COMPONENTS GALVANIZED AND PAINTED.
250 KNOCK-OUT PANEL FOR FUTURE WINDOWS OR DOORS.
401 CONCRETE WALL, PAINTED.
420 3/4" X REVEAL.
429 ALUMINUM MULLION FINISH CLEAR, ANODIZED.
430 ALUMINUM STOREFRONT SYSTEM WITH 1" INSULATED GLASS HIGH PERFORMANCE GLAZING PPG SOLARBAN(3) OPTIBLUE.
432 METAL CANOPY , METAL FINISH - PPG- DURANAR, COSMIC GRAY MICA.
433 CONCRETE FORMLINER - US FORMLINER 2777 TIGRIS.

LEGENDS

GLASS:

VISION GLASS

TEMPERED GLASS

ALL GLASS USED ON THE ENVELOPE OF THE BUILDING TO BE:
XXXXXXX
U FACTOR = 0.28 AND SHGC = 0.26
GLASS WIND LOAD RESISTANCE CALCULATIONS ARE UNDER SEPARATE PERMIT

COLORS:

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW.

BASE COLOR: SHERWIN WILLIAMS SW 7070 - SITE WHITE

SECONDARY COLOR: SHERWIN WILLIAMS SW 7075 - WEB GRAY

ACCENT COLOR: SHERWIN WILLIAMS SW 9162 - AFRICAN GRAY

MULLION:

ALUMINUM MULLION FINISH, CLEAR, ANODIZED.

N

City of Vacaville
LDK Warehouse Project

Stantec

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Figure 2.0-8: Project Elevation - Building 1

NOTES

SEE SHEET A0.2 FOR GENERAL NOTES

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401 CONCRETE WALL, PAINTED.
420 3/4" V-REVEAL.
429 ALUMINUM MULLION FINISH CLEAR, ANODIZED.
430 ALUMINUM STOREFRONT SYSTEM WITH 1" INSULATED GLASS.HIGH PERFORMANCE GLAZING-PPG-SOLARBAN(2) OPTIBLUE.
432 METAL CANOPY , METAL FINISH - PPG: DURANAR, COSMIC GRAY MICA.
433 CONCRETE FORMLINER - US FORMLINER 2/77 TIGRIS.

LEGEND

GLASS:

VISION GLASS

TEMPERED GLASS

ALL GLASS USED ON THE ENVELOPE OF THE BUILDING TO BE:
XXXXXXX
U FACTOR = 0.28 AND SHGC = 0.28
GLASS WIND LOAD RESISTANCE CALCULATIONS ARE UNDER SEPARATE PERMIT

COLORS:

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW.

BASE COLOR: SHERWIN WILLIAMS SW 7070 - SITE WHITE

SECONDARY COLOR: SHERWIN WILLIAMS SW 7075 - WEB GRAY

ACCENT COLOR: SHERWIN WILLIAMS SW 9162 - AFRICAN GRAY

MULLION:

ALUMINUM MULLION FINISH, CLEAR, ANODIZED.

N

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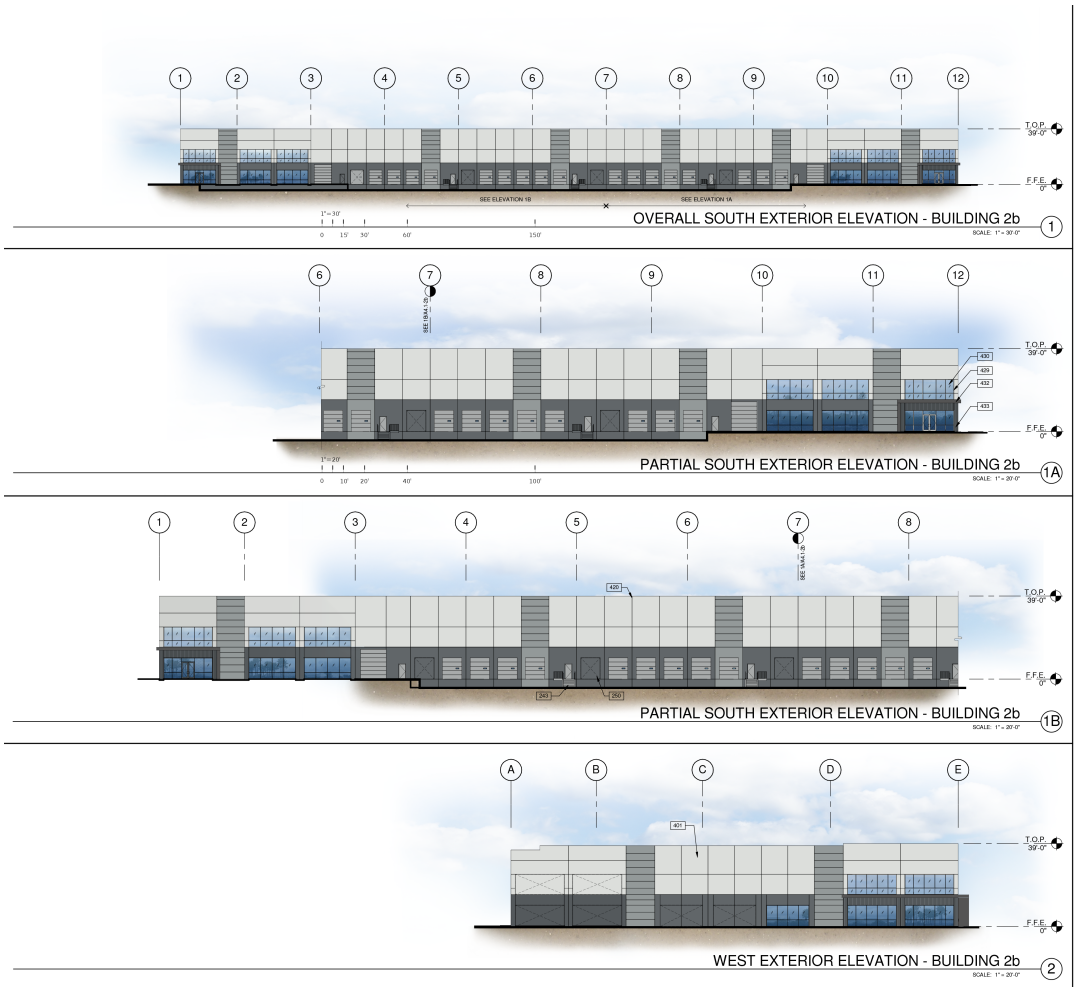
Figure 2.0-9: Project Elevation - Building 2a



NOTES

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432 METAL CANOPY , METAL FINISH - PPG- DURANAR, COSMIC GRAY MICA.
433 CONCRETE FORMLINER - US FORMLINER #777 TIGRIS.

LEGENDS

GLASS:

VISION GLASS

TEMPERED GLASS

ALL GLASS USED ON THE ENVELOPE OF THE BUILDING TO BE:
XXXXXXX
U FACTOR = 0.29 AND SHGC = 0.29
GLASS WIND LOAD RESISTANCE CALCULATIONS ARE UNDER SEPARATE PERMIT

COLORS:

PROVIDE 6'-0" WIDE PAINT COLOR MOCK-UP FULL HEIGHT OF BUILDING FOR OWNER/ARCHITECT REVIEW.

BASE COLOR: SHERWIN WILLIAMS SW 7070 - SITE WHITE

SECONDARY COLOR: SHERWIN WILLIAMS SW 7075 - WEB GRAY

ACCENT COLOR: SHERWIN WILLIAMS SW 9162 - AFRICAN GRAY

MULLION:

ALUMINUM MULLION FINISH, CLEAR, ANODIZED.

N

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Figure 2.0-10: Project Elevation - Building 2b

2.1.1 Project Location

The proposed project is in northwest Vacaville west of I-505 in the City's Interchange Business Park Policy Plan area along Midway Road and Eubanks Drive, north of the former SaveMart Distribution Center (Figure 2.0-2).

2.1.2 Land Use and Zoning Designations

General Plan Land Use Designations

The City's General Plan designates the northern portion of the project site (generally north of Gibson Canyon Creek) Commercial Office and the southern portion of the project site (generally south of Gibson Canyon Creek) Industrial Park.

The Commercial Office land use designation is defined as follows:

> *"The Commercial Office designation provides sites for office development. Supporting retail and business services are permitted. This designation is intended for transition areas between commercial and residential areas. The Land Use and Development Code identifies a Professional Office overlay zoning district that can be applied to this land use designation that limits the types of permitted uses to professional and administrative offices, including medical and dental offices, which primarily provide services to local residents. No retail type of uses are allowed within this overlay district".*

The Industrial Park land use designation is defined as follows:

> *"The Industrial Park designation provides sites for industrial uses that require access to major transportation lines and large areas for structures, truck loading and parking, and storage of products, equipment, and materials. This designation also accommodates light manufacturing and heavy industrial uses, subject to appropriate standards to ensure that adjacent uses are not adversely impacted. The commercial uses and services must also be ancillary, rather than primary, uses, and there must be adequate public infrastructure to support the proposed use. Policy plans and specific plans may additionally allow for limited office and commercial uses. This designation is intended to protect Vacaville's established industrial areas, which constitute a major resource, from encroachment by non-industrial retail and commercial uses. The floor area ratio (FAR) is generally limited to 0.4."*

Zoning

The project site parcel is located within the Industrial Park Zoning District, which is described as follows:

> *"The IP-Industrial Park district provides for large industrial and warehousing uses, some supporting commercial uses, as well as some interim agricultural uses as provided in this chapter. The provisions of this chapter are established to achieve the following purposes:*
> *To allow for the establishment of large industrial use and certain types of secondary commercial uses and services for employees and businesses;*
> *To allow for the establishment of large industrial use and certain types of secondary commercial uses and services for employees and businesses;*

To allow for the establishment of large industrial use and certain types of secondary commercial uses and services for employees and businesses."

Policy Plan

The project site is located in Area II (generally north of Gibson Canyon Creek) and Area III of the Interchange Business Park Policy Plan. As proposed, the project would comply with the requirements and standards listed in the plan. There are no changes proposed to the plan. The plan is available at the Community Development Department or online at the following website: http://bit.ly/InterchangePolicyPlan

The following goals and policies of the plan are pertinent to the proposed project:

- Industrial uses shall be compatible with the residential and public uses allowed in the area and its surroundings to the extent possible while recognizing the overall industrial nature of the business park. Compatibility shall be promoted through the appropriate use of the site, site location, site planning, and design.

- Development shall provide for necessary public facilities and services.

- Development of the site shall be consistent with the City's General Plan, applicable City land use policies and standards, special required studies, and other applicable planning documents. For example, development plans shall demonstrate compliance with any required noise and traffic studies, environmental review, and Airport Land Use Compatibility Plans.

- Site planning, building design, and construction shall consider all feasible energy conservation techniques and use life-cycle costing, which considers both initial costs and long-term operational costs. Landscaping shall be provided in accordance with the City's Water Efficient Landscape Regulations.

- The use of mass transit, carpooling, bicycling, and other options to reduce auto dependency should be encouraged through appropriate design.

- Buildings, site development, and on-site utilities for sewer, water, drainage, electrical and natural gas shall be designed and constructed in accordance with the Utility Master Plan, Uniform Building Code, adopted Fire Code, and other adopted uniform codes as amended by the Municipal Code.

- Special character and quality of industrial area architecture and landscape design shall be applied to areas visible from I-505 and adjacent to Vaca Valley Parkway and Midway Road.

2.2 PROJECT COMPONENTS

2.2.1 Building 1

Building Structure

Building 1 would be constructed on the south portion of the project site approximately 210 feet south of Gibson Canyon Creek. Building 1 would be approximately 617,760 square feet and would include approximately 28,080 square feet of office space, associated parking, and landscaping on 42.50 acres. The proposed warehouse would be a one-story building that would include 122 dock-high doors, 20 knock-out doors, and 4 grade-level doors on the north and south sides of the building. Four concrete ramps would be installed at each corner of the building to access the grade-level doors.

As shown on the building site plan (Figure 2.0-5), the building entrances and the loading docks would be located on the north and south sides of the building and the office space would be located at the east end of the building. Exact office build-outs are unknown at this time and would be determined by the future building tenant.

The building would comprise concrete wall panels and a parapet roof with aluminum accent panels and metal finishes. Tempered and vision glass windows would be installed at the east end of the building for the office space. A metal canopy would also be installed above the office entrance. Exterior staircases made of galvanized steel would be installed at each loading dock. The building would be designed with earth-tone colors and in a style that is consistent with the other two buildings and the site development standards of the Interchange Business Park Policy Plan.

The main roofline of the building would be approximately 36 feet high, and portions of the building would be up to 40 feet high. The elevations of Building 1 are shown on Figure 2.0-8.

Parking

The total paved parking area for Building 1 would be approximately 178,030 square feet located on the east side of the building. Building 1 would provide 502 automobile surface parking spaces, consisting of 492 standard parking spaces and 10 accessible parking spaces. One of the accessible parking spaces would be designated for van accessibility. Building 1 would also have a 39,084-square-foot parking area on the north and west sides of the building to accommodate 233 trailer parking spaces.

A bicycle rack would be installed near each building entrance on the north and south sides of the building. Each bicycle rack would accommodate at least five bicycles as required by Chapter 14.09.128 of the City's Municipal Code.

Landscaping

Landscaping would be planted around the perimeter of the north, west, and east boundaries of the parking areas, and along the south boundary of the project site. Plantings would also be placed within the parking lot islands and around the east side of the building near the office space. The total landscaping area for Building 1 would be approximately 95,893 square feet.

Landscape plantings would consist of a mixture of medium- to large-scale trees, shrubs, perennials, and grasses. Landscape plantings would be used to sufficiently screen views of the project site from neighboring land uses and to provide shade in the parking areas. Total parking lot shade for Building 1 would be approximately 93,380 square feet. The landscape plan for Building 1 is shown on Figure 2.0-11.

2.2.2 Building 2a

Building Structure

Building 2a would be constructed on the northwestern portion of the project site at the intersection of Midway Road and Eubanks Drive, approximately 100 feet north of Gibson Canyon Creek. The warehouse building would be approximately 33,696 square feet and would include approximately 2,704 square feet of office space, associated parking, and landscaping on 8.38 acres. The warehouse would be a one-story building and would include 10 dock-high doors, one knock-out door, and one grade-level door. One concrete ramp would be installed in the northern portion of the loading dock area to access the grade-level truck door.

As shown on the building site plan (Figure 2.0-6), the main building entrance would be located on the west side of the building facing Eubanks Drive, and the loading docks would be located on the east side of the building. The 2,704 square feet of office space would be located at the southwestern corner of the warehouse building. Exact office build-outs are unknown at this time and would be determined by the future building tenant.

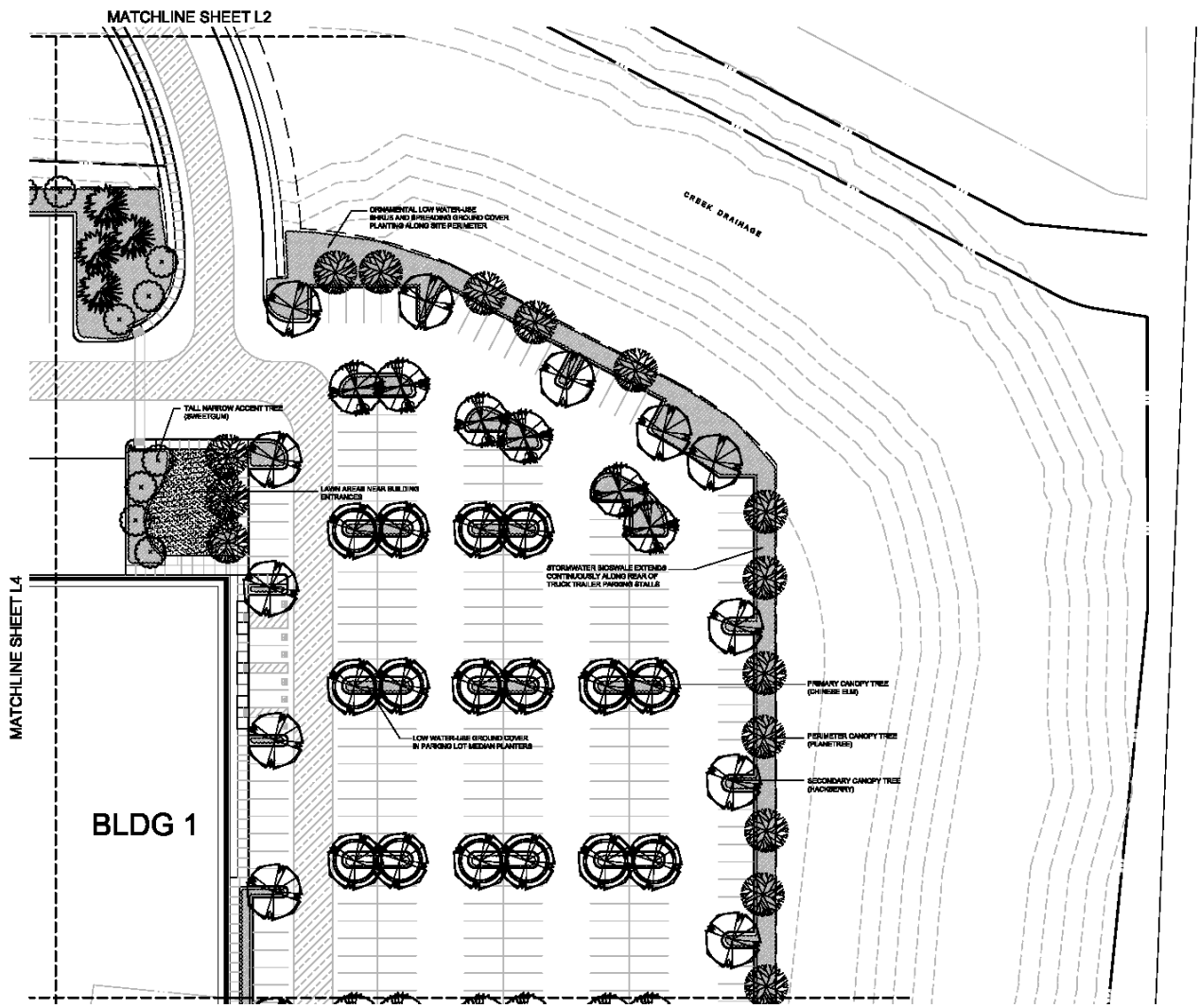
The warehouse building would consist of concrete wall panels and a parapet roof with aluminum accent panels and metal finishes. Tempered and vision glass windows would be installed along the west and south sides of the building for the office space. A metal canopy would also be installed above the office entrance. Galvanized steel exterior staircases would be installed at each loading dock. The building would be designed with earth-tone colors and in a style that is consistent with the other two buildings and site development standards of the Interchange Business Park Policy Plan.

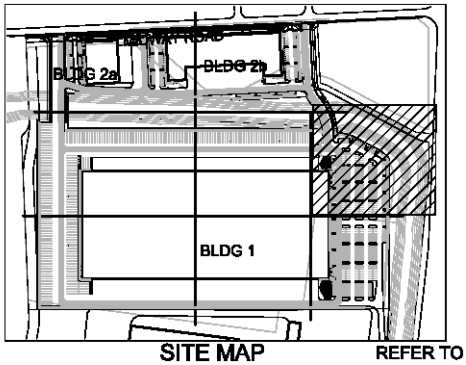
The main roofline of the building would be approximately 28 feet high, and portions of the building would be up to 36 feet high. Elevations of Building 2a are shown on Figure 2.0-9. A 153-square-foot trash and recycling enclosure would be constructed near the building's northern landscape planting area. The trash and recycling enclosure would be secured by a painted steel gate and metal roof and screened by a concrete masonry wall and landscape plantings.

Parking

The paved parking area for Building 2a would be approximately 10,805 square feet and would be located on the west side of the building. Building 2a would provide 38 automobile surface parking spaces consisting of 36 standard parking spaces and two accessible parking spaces. One of the accessible parking spaces would be designated for van accessibility.

A bicycle rack would be installed on the west side of the building near the building's main entrance. The bicycle rack would accommodate at least five bicycles, as required by Chapter 14.09.128 of the City's Municipal Code.





SITE MAP REFER TO

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Figure 2.0-11: Landscape Plan- Building 1

Landscaping

Landscaping would be planted along the frontage of Midway Road and along the project site's western driveway entrance. Plantings would also be installed in the parking lot islands and along the west and south sides of Building 2a near the office space. The combined landscape areas for Buildings 2a and 2 b would be approximately 81,436 square feet. Landscape plantings would consist of a mixture of medium- to large-scale trees, shrubs, perennials, and grasses. The landscape plantings would be used to sufficiently screen views of the project site from neighboring land uses and to provide shade in the parking areas. The total parking lot shade area for Building 2a would be approximately 8,304 square feet. The landscape plan for Building 2a is shown on Figure 2.0-12.

2.2.3 Building 2b

Building Structure

Building 2b would be constructed in the northeastern portion of the project site along Midway Road, approximately 120 feet north of Gibson Canyon Creek. The building would be 93,240 square feet and would include two 5,520-square-foot office spaces totaling 11,040 square feet, associated parking, and landscaping on 8.38 acres. The warehouse would be a one-story building that would include 24 dock-high doors, 4 knock-out doors, and 2 grade-level doors. Two concrete ramps would be installed at each end of the loading dock area for the grade-level truck doors.

As shown on the building site plan (Figure 2.0-7), the building entrances would be on the south side of the building at the western and east ends, and the loading docks would be located on the south side of the building. Each of the 5,520-square-foot office spaces would be located on the west and east sides of the building. Exact office build-outs are unknown at this time and would be determined by the future building tenant.

The warehouse building would be constructed of concrete wall panels and a parapet roof with aluminum accent panels and metal finishes. Tempered and vision glass windows would be installed along the south, west, and east sides of the building for the office spaces. A metal canopy would also be installed above each office entrance. Galvanized steel exterior staircases would be installed at each loading dock. The building would be designed with earth-tone colors and in a style that is consistent with the other two buildings and site development standards of the Interchange Business Park Policy Plan.

The main roofline of the building would be approximately 32 feet high and portions of the building would be reduced from the originally proposed height of up to 39 feet, down to 36 feet, in conformance with the development standards established by the Interchange Business Park Policy Plan. The elevations of Building 2b are shown on Figure 2.0-10. A 153-square-foot trash and recycling enclosure would be constructed near the building's landscape planting area south of the east entrance. The trash and recycling enclosure would be secured by a painted steel gate and metal roof and screened by a concrete masonry wall and landscape plantings.

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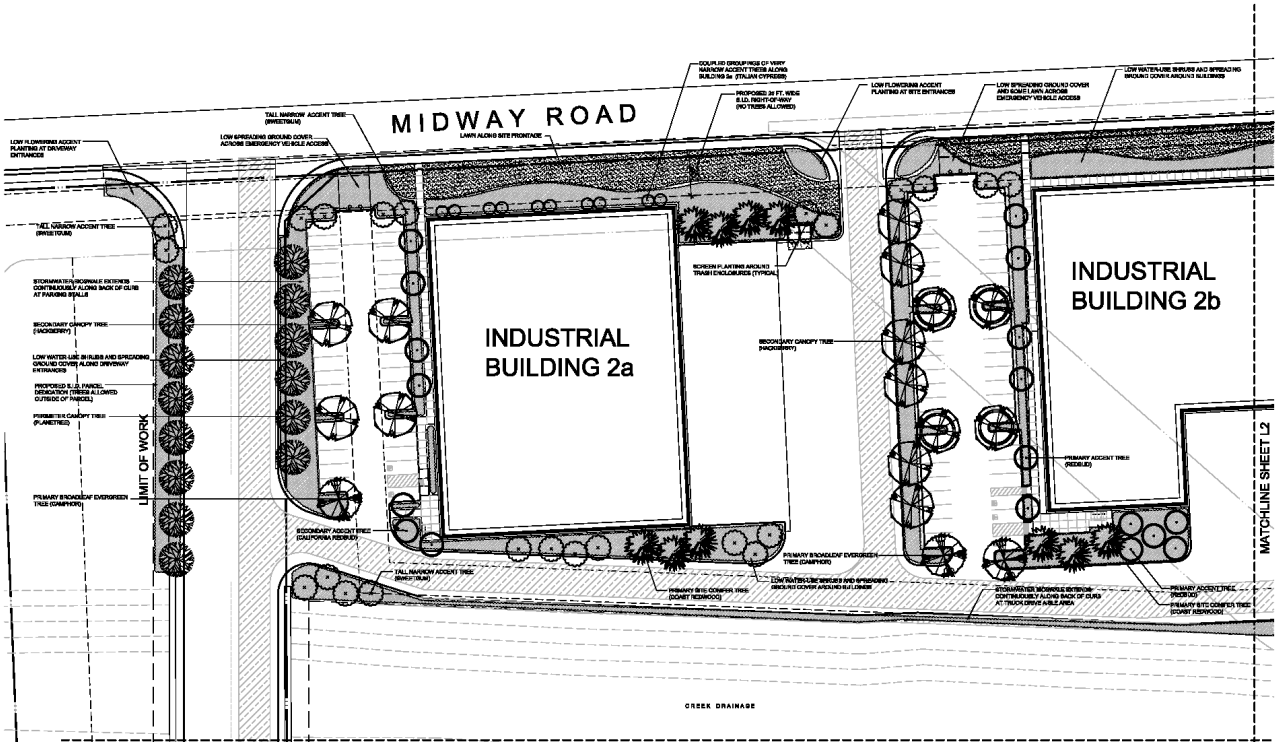

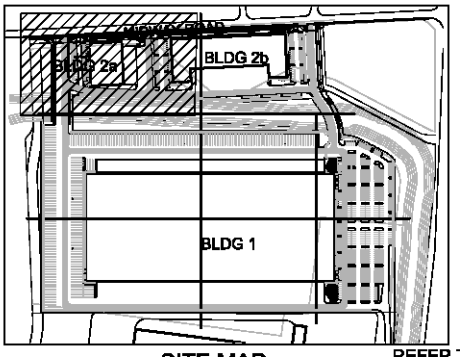

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Figure 2.0-12: Landscape Plan - Building 2a

Parking

The total paved parking area for Building 2b would be approximately 40,170 square feet and would be located on the west and east sides of the building. Building 2b would provide 130 automobile surface parking spaces consisting of 124 standard parking spaces and six accessible parking spaces. One of the accessible parking spaces would be designated for van accessibility. A pedestrian sidewalk would be installed.

A bicycle rack would be installed on the west and east sides of the building near the building's entrances. The bicycle rack would accommodate at least five bicycles, as required by Chapter 14.09.128 of the City's Municipal Code.

Landscaping

Landscaping would be planted along the frontage of Midway Road and along the project site's eastern driveway entrance. Plantings would be installed along the west, east, and south sides of the building near the two office spaces, in the parking lot islands, and along Gibson Canyon Creek. The combined landscape area for Buildings 2a and 2b would be approximately 81,436 square feet. Landscape plantings would consist of a mixture of medium- to large-scale trees, shrubs, perennials, and grasses. The landscape plantings would be used to sufficiently screen views of the project site from neighboring land uses and to provide shade in the parking areas. The total parking lot shade are for Building 2b would be approximately 35,340 square feet**.** The landscape plan for Building 2b is shown on Figure 2.0-13.

2.2.4 Landscape Plan and Tree Removal

The proposed project would remove 27 trees from the project site. A tree removal permit would be required from the City for the removal of these trees. As shown on Figure 2.0-11 through Figure 2.0-14, the proposed project would include replacing all removed trees and providing approximately 177,329 square feet of landscaping.

Landscaping design and installation for the proposed project would conform to the site development standards for the Interchange Business Park Policy Plan and the standards and procedures set forth in the City's Water Efficient Landscape Regulations (Chapter 14.27.030 of the City's Municipal Code). The purpose of such regulations is to establish standards and procedures for landscape designs and installations that are publicly and privately owned and maintained. The intent of the requirements is to develop standards and guidelines for landscapes that use reasonable amounts of water. The requirements call for reduced water consumption, responsible landscape design, water-efficient landscape irrigation practices, responsible landscape maintenance, and the use of non-potable water for irrigation when available. These requirements are integrated into the City's existing process of checking landscape and irrigation plans as part of the building permit process.

2.2.5 Lighting

Site lighting may be provided in the new parking lot and exterior areas, in accordance with Chapter 14.09.127 and Chapter 14.09.128 of the City's Municipal Code and the development standards for the Interchange Business Park Policy Plan. A Photometric Plan would be provided

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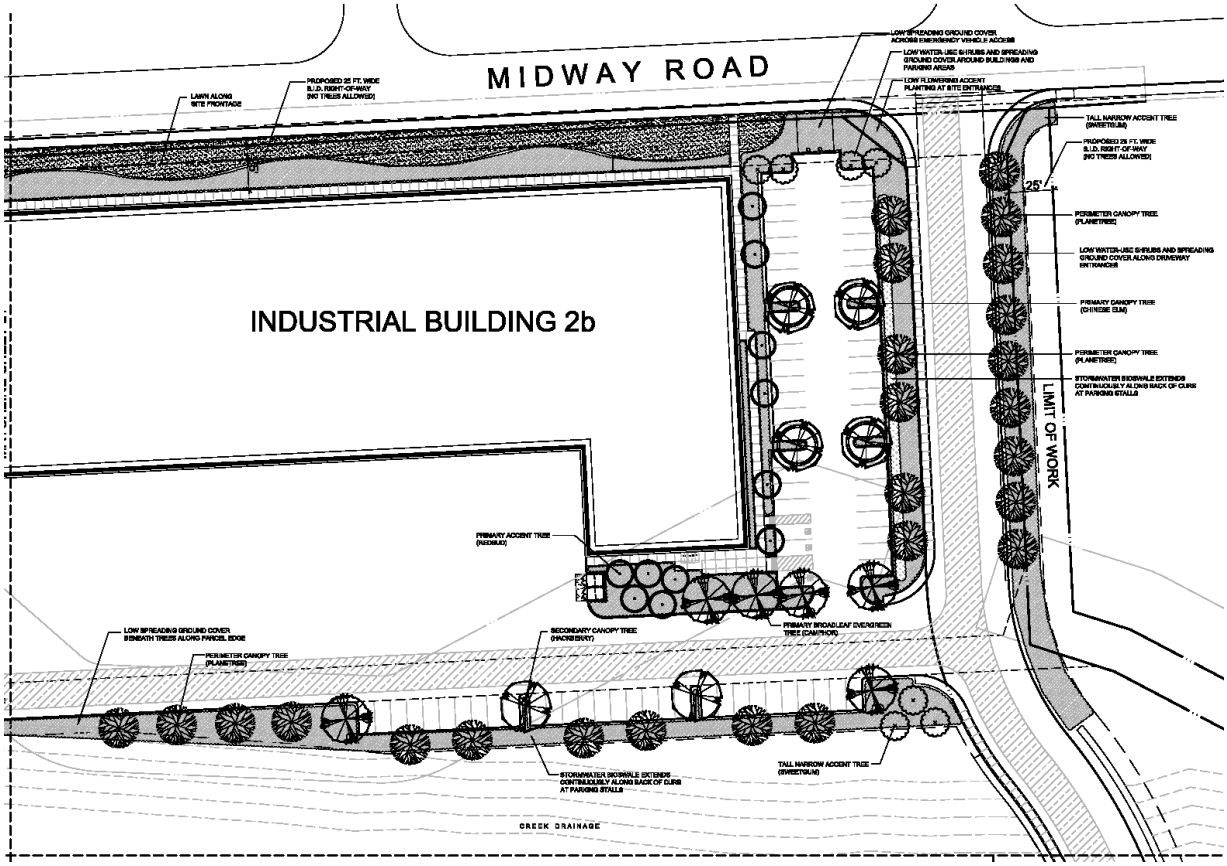

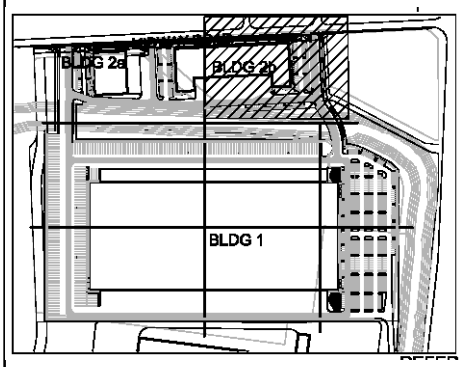

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Figure 2.0-13: Landscape Plan - Building 2b

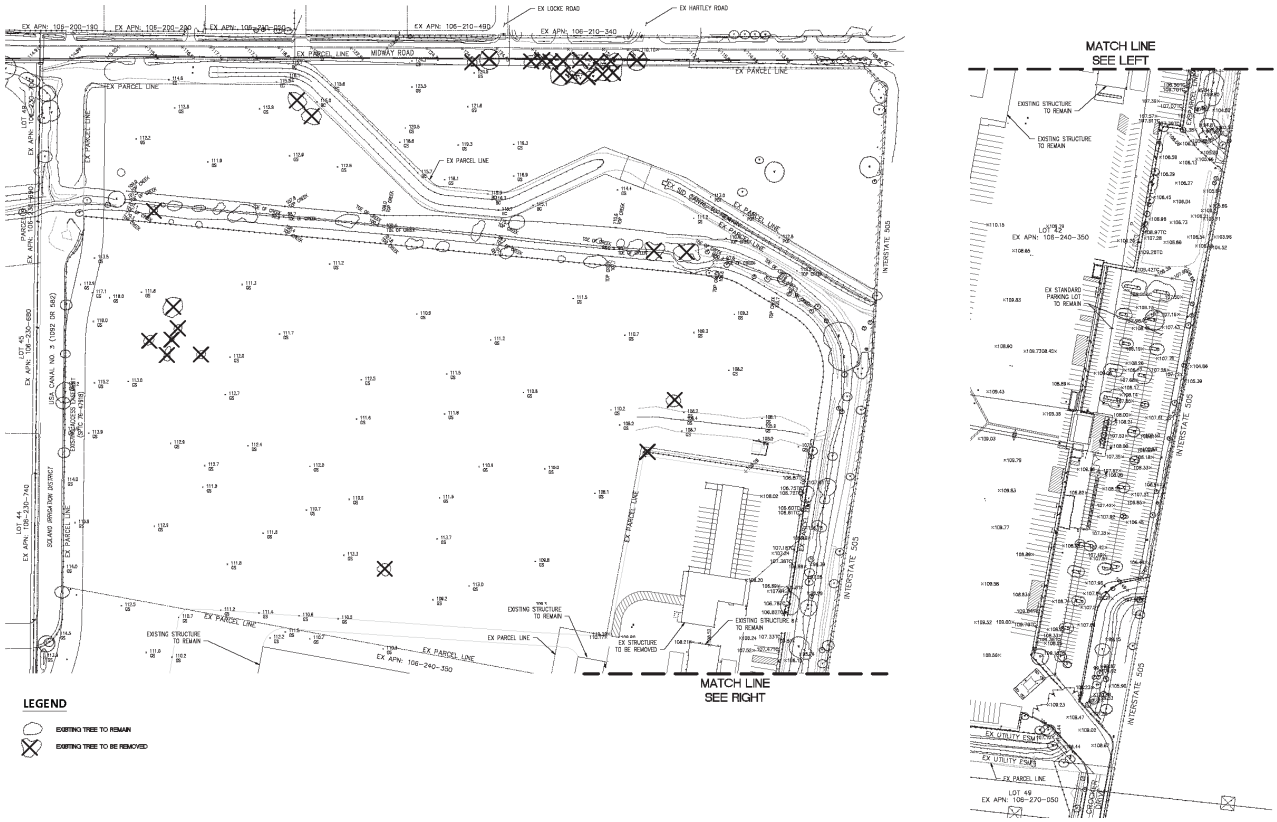

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Figure 2.0-14: Topographic Map

in the design stage to ensure City requirements are followed. The exterior lighting would illuminate building entrances and provide on-site safety and security. Parking lot lighting would include standard parking lot fixtures up to 30-foot-high with a 4-foott-high base that are designed to direct light downward with directional shielding to reduce glare on surrounding properties and I-505.

Perimeter lighting would be provided via 30-foot-high poles with a 4-foot-high base, each of which would contain 309-watt LED lamps. Power for site lighting would come from new building service. Normal power would be provided for the parking lot lighting.

2.2.6 Access and Circulation

The proposed project would construct three driveway entrances on Midway Road: one driveway at the western and eastern ends of the project site, and one driveway between Building 2a and Building 2b to provide access to the internal parking areas. The proposed project would widen the eastbound lane of Midway Road by approximately 9.5 feet to accommodate the three new driveways and allow for a two-way left turn lane.

Access to the southern portion of the project site would require the construction of two internal roadways to cross Gibson Canyon Creek. The proposed project would install twin culvert boxes approximately 6 feet high by 10 feet wide within the creek channel to support the two roadways. The two roadways crossing Gibson Canyon Creek would each be two-lane. The roadway located on the west side would be 60 feet wide and the roadway on the east side would be 40 feet wide. Midway Road and Crocker Drive would provide emergency access.

Site improvements would be installed along Midway Road and throughout the project site, consisting of curbs, gutters, sidewalks, signing, lighting, and striping, as required by the Interchange Business Park Policy Plan. The proposed project would include constructing accessible walkways in accordance with the Americans with Disabilities Act (ADA) between the accessible parking spaces and the building entrances to allow for pedestrian access on-site.

2.2.7 Utility Infrastructure

Solano Irrigation District Canal

The proposed project would require piping 2,025 feet of the SID Canal where it crosses the northern portion of the project site. The canal would be piped via a 48-inch pipe buried 10± feet below ground within a new 25-foot ROW. The new ROW would be located north of Building 2a and 2b and would generally extend west to east across the project site, turning south just east of the eastern driveway and continuing east on the southern bank of the existing canal (Figure 2.0-15). The pipeline would include tie-ins to the existing SID Canal pipelines at the west and east ends of the project site. The SID Canal would be temporarily shut down to complete the pipeline connections.

Following pipeline installation, the open channel across the project site would be decommissioned. The open channel portions of the canal would be filled with 3,000 cubic yards of imported fill. The imported fill would be compacted to 90 percent relative compaction for construction. Once decommissioning of the canal is complete, the Solano Irrigation District

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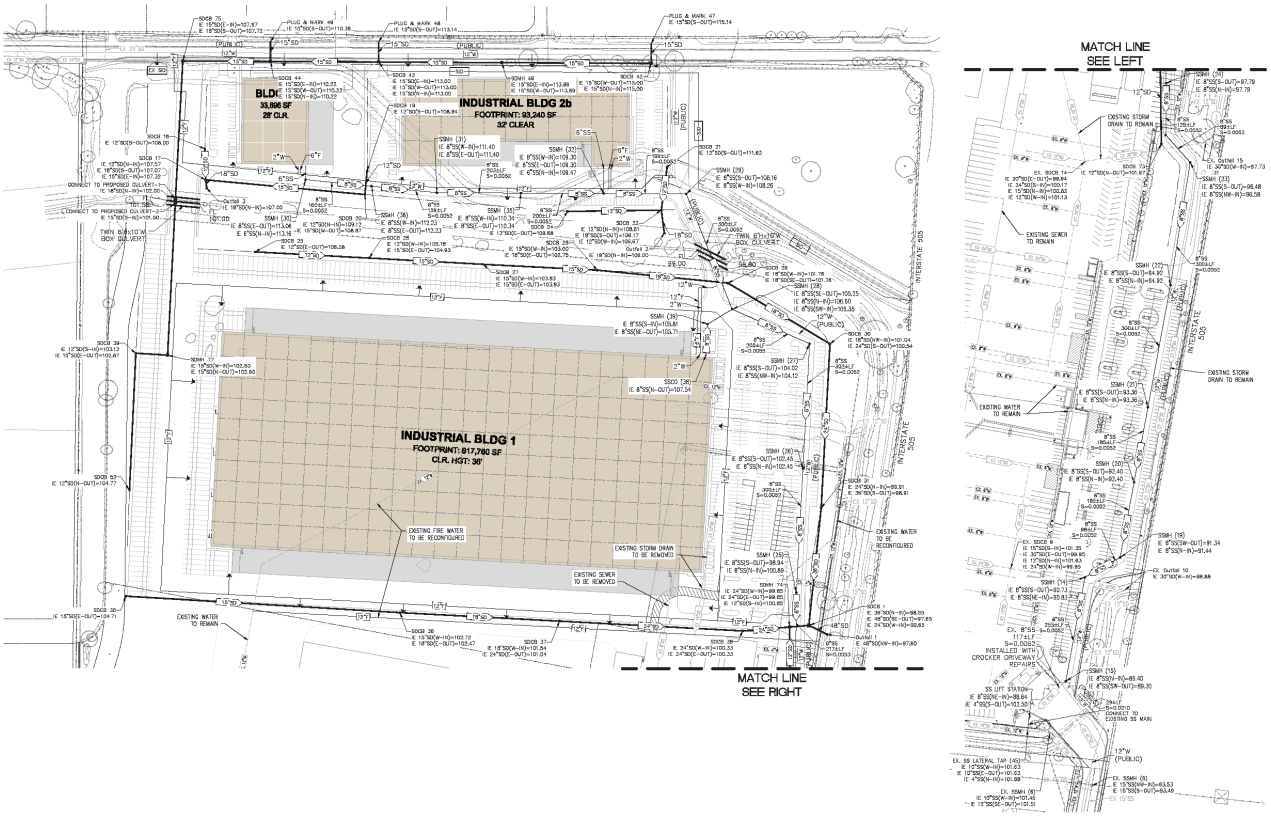

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Figure 2.0-15: Utility Plan

would "quitclaim" its current ROW within the project site and maintain the new 25-foot ROW within the project site.

Water Supply

Utility improvements for the Interchange Business Park Policy Plan area, which are separate from the LDK Warehouse Project, are underway by the City of Vacaville Public Works Department to provide adequate utility service and fire protection for this area. The proposed project would be served by a proposed 12-inch-diameter water main installed by the City of Vacaville Public Works Department as part of the "Improvement Plans for Crocker Drive Water Line Extension Project," which would extend north from Crocker Drive through the project site and extend west in Midway Road to connect to an existing City water main in Eubanks Road. A 2-inch-diameter water main would be extended from the City's proposed 12-inch-diameter water line to serve Building 1. The proposed project would also install 2-inch-diameter water mains for Building 2a and Building 2b, which would connect to the City's proposed 12-inch-diameter water main (Figure 2.0-15).

The proposed project would relocate an existing 12-inch-diameter fire water main for the existing SaveMart Distribution Center, which is currently located in the footprint of Building 1. Buildings 1, 2a, and 2b would be served with fire water from the proposed 12-inch-diameter fire water main, which would be looped through the site and sourced from the City's proposed 12-inch-diameter water main. The proposed project would install 22 fire hydrants to serve the project site. Five of the fire hydrants would be installed along the Midway Road frontage at a distance of 250 feet apart to serve the City's proposed 12-inch-diameter water main.

The anticipated water demand for Building 1 would be 53,127 gallons per day (gpd), Building 2a would be 2,898 gpd, and Building 2b would be 5,594 gpd. Therefore, it is anticipated the water demand for the proposed project would be 61,619 gpd (pers. comm. PEI Engineering).

Wastewater

The proposed project would connect to an existing 10-inch-diameter trunk line within the project boundary. Buildings 1, 2a, and 2b would require the installation of an 8-inch-diameter collector line to connect to a proposed sewer lift station, which would lift the proposed project sewer approximately 13 feet into the existing 10-inch-diameter trunk line south of the former SaveMart Distribution Center. It is anticipated Building 1 would generate 94,517 gpd, Building 2a would generate 5,155 gpd, and Building 2b would generate 14,266 gpd. Therefore, the anticipated wastewater generated by the proposed project would be 113,938 gpd (pers. comm. PEI Engineering).

Storm Drainage

Stormwater at the project site would outfall into Gibson Canyon Creek, located between the north and south portions of the project site. The proposed project would install a 12- to 24-inch-diameter storm drain to serve Building 1, Building 2a, and Building 2b. The proposed project would create 1,548,000 square feet of new impervious surface; it would also include approximately 215,000± square feet of pervious surface, including, but not limited to, landscape planters and bioswales along the southern, western, and eastern boundaries of the project site. The proposed project would also install 53,000± square feet of bioswales along the north and

south sides of Gibson Canyon Creek. Stormwater would be directed to and treated at landscaped areas and within the bioswales before outfalling into Gibson Canyon Creek.

Electricity

Pacific Gas and Electric Company (PG&E) provides electricity and natural gas service to the project site. Electrical and gas connections would be made with existing facilities located on-site.

2.3 PROJECT CONSTRUCTION

2.3.1 Construction Schedule

Construction is anticipated to occur from April 2019 through July 2021 (approximately 27 months). Demolition of the truck trailer parking area on the south side of the project site would take approximately 90 days and grading would occur over 140 days. Construction of the proposed project would occur in three phases (one phase per each of the three buildings). The proposed project would require up to 110 workers for the construction of Building 1, up to 60 workers for the construction of Building 2a, and up to 100 workers for the construction of Building 2b during the peak construction phase. It is anticipated that the construction workforce will be available in nearby areas.

Project construction and grading activities would be consistent with the City's Municipal Code and would occur between 7:00 a.m. and 5:00 p.m., Monday through Friday. Project construction and grading activities would not occur on Saturdays, Sundays, or holidays. Construction hauling would be limited to between 7:00 a.m. and 6:00 p.m. on weekdays.

2.3.2 Construction Equipment

Construction equipment anticipated on-site would include, but not be limited to, scrapers, water trucks, grading blades, motor graders, forklifts, skiploaders, backhoes, excavators, and loaders for site work and the construction of Building 1, Building 2a, and Building 2b.

2.3.3 Construction Access and Staging Areas

Construction crews would access the project site from I-505 and Midway Road. The proposed project would require the widening of Midway Road for installation of the three proposed driveways. During this time, Midway Road may be temporarily reduced to one lane. A Traffic Control Plan would be prepared as part of the proposed project.

Construction staging areas would be located on-site near the northern and eastern boundaries of the project site. The staging areas would be used to store construction equipment, vehicles, and materials; for construction preparation activities; and for stockpiling of soils. Staging areas would total 1 acre of temporary disturbance and would be returned to their preconstruction condition upon project completion. Staging areas are depicted on Figure 2.0-2. Temporary fencing would be installed around the perimeter of the project site during construction for security purposes.

2.3.4 Demolition and Grading

Prior to construction, the existing covered truck trailer parking area on the former SaveMart Distribution Center site would be demolished. The total volume of cut and fill on-site would be approximately 198,000 cubic yards. The maximum depth for cut would be approximately 11 feet, and the maximum depth for fill would be approximately 6 feet. The total volume of fill to be imported would be approximately 10,000 cubic yards. Erosion control measures employed during grading operations would include straw waddles and silt fences, as appropriate, around disturbed areas. The grading plan is presented in Figure 2.0-16.

2.4 PROJECT OPERATION AND MAINTENANCE

The proposed project would operate as a warehouse distribution facility. There is no specific building tenant identified with the application. As such, assumptions relating to the number of employees and hours of operation have been substantiated by examining similar uses in the area and in accordance with the Interchange Business Park Policy Plan. It is expected the future warehouse distribution facility would operate Monday through Friday from 8:00 a.m. to 5:00 p.m. and employ up to 450 full-time employees.

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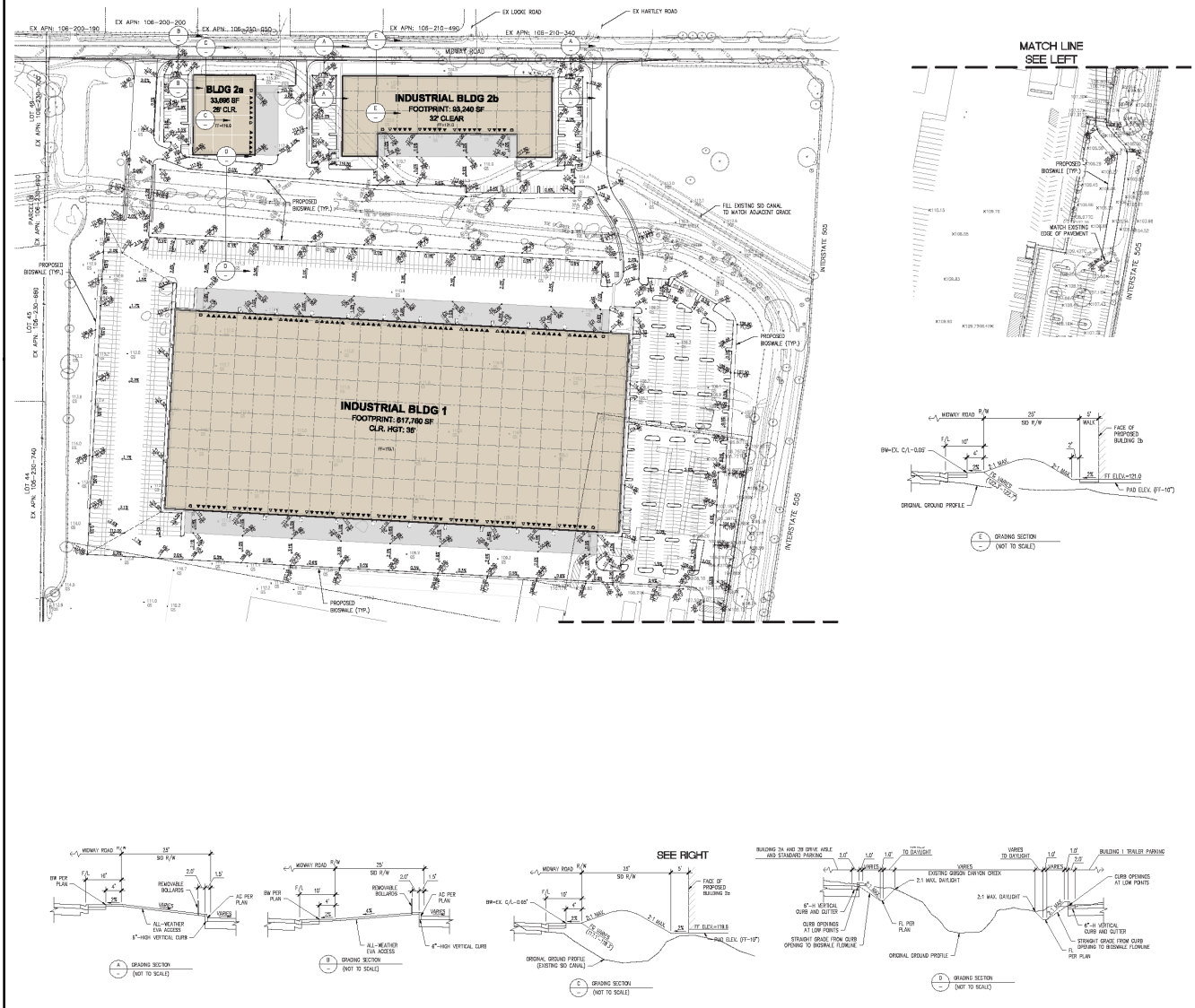

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Figure 2.0-16: Grading Plan

3.0 ENVIRONMENTAL CHECKLIST AND ENVIRONMENTAL EVALUATION

The environmental factors checked below would be potentially affected by this project, involving at least one impact that requires mitigation to reduce the impact from "Potentially Significant" to "Less Than Significant" as indicated by the checklist on the following pages.

☒ Aesthetics	☐ Agriculture Resources	☒ Air Quality
☒ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☒ Greenhouse Gas Emissions	☒ Hazards & Hazardous Materials	☒ Hydrology/Water Quality
☒ Land Use/Planning	☐ Mineral Resources	☒ Noise
☐ Population/Housing	☐ Public Services	☐ Recreation
☐ Transportation/Traffic	☒ Tribal Cultural Resources	☐ Utilities/Service Systems
☒ Mandatory Findings of Significance		

Evaluation of Environmental Impacts

Section 3.0, Environmental Checklist and Environmental Evaluation, presents the environmental checklist form found in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the project. A discussion follows each environmental issue identified in the checklist. Included in each discussion are project-specific mitigation measures, if needed.

For the checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant and for which mitigation has not been identified. If any potentially significant impacts are identified, an Environmental Impact Report (EIR) must be prepared. An ISMND cannot be used if there are potentially significant impacts that cannot be mitigated.

Less Than Significant with Mitigation Incorporated: This designation applies when applicable and feasible mitigation measures previously identified in prior applicable EIRs or in the General Plan EIR have reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact" and, pursuant to Section 21155.2 of the PRC, those measures are incorporated into the ISMND.

This designation also applies when the incorporation of new project-specific mitigation measures not previously identified in prior applicable EIRs or in the General Plan EIR have reduced an effect from a "Potentially Significant Impact" to a "Less Than Significant Impact".

Less Than Significant Impact: Any impact that would not be considered significant under CEQA, relative to existing standards.

No Impact: The proposed project would not have any impact.

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3.1 AESTHETICS

	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?	☐	☐	☒	☐
b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☒	☐
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☒	☐
d)	Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

3.1.1 Environmental Setting

Visual Character of the Project Site

The project site is in north Vacaville west of I-505 and south of Midway Road in the City's Interchange Business Park Policy Plan area, which the City designated for the location of large-scale manufacturing, research, wholesale, and storage uses. The project site totals 68.90 acres and is located in Area II and Area III of the Policy Plan area. Area II includes the northern portion of the project site, which fronts Midway Road and extends south to Gibson Canyon Creek. The northern portion of the project site is predominantly undeveloped; however, 2,025 feet of the SID Canal extends west to east across this portion of the project site. Area III includes the southern portion of the project site, which extends south from Gibson Canyon Creek to the former SaveMart Distribution Center. The southeastern portion of the project site includes a covered truck trailer parking area for the former SaveMart Distribution Center. The land uses surrounding the project site consist of a mix of uses, including industrial, commercial, and warehouse facilities to the south; residential and commercial uses to the north and west; and I-505 to the east.

Scenic Corridors

The California Department of Transportation (Caltrans) manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. According to the Caltrans State Highway Network Data Library and the General Plan, there are no State scenic highways located in Vacaville (Caltrans 2017; City of Vacaville 2015a).

Scenic Resources

The City's scenic resources are a valued local asset for the community. The General Plan does not designate any official scenic vistas within the City's Planning Area. However, scenic resources that are valued by many residents in the City and identified in the General Plan include the Vaca Mountains and the English Hills, located outside the city limits or even beyond the Planning Area boundary; and open space areas throughout the city (City of Vacaville 2015a). The Vaca Mountains and English Hills are approximately four to six miles west of the project site.

3.1.2 Methodology

Analysis of the proposed project's visual impacts is based on an evaluation of the changes to the existing visual resources that would result from implementation of the proposed project. In determining the extent and implications of the visual changes, consideration was given to the existing visual quality of the affected environment; specific changes to the visual character and quality of the affected environment as a result of the proposed project; the extent to which the affected environment contains places or features that provide unique visual experiences or that have been designated in plans and policies for protection or special consideration; and the sensitivity of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities that would be affected by the proposed project. The existing setting was based on review of documents pertaining to the project site, including the General Plan, General Plan EIR, Interchange Business Park Policy Plan, and Section 2.0, Project Description, of this ISMND.

3.1.3 Environmental Impact Analysis

This section discusses the potential impacts on Aesthetics associated with the proposed project and provides mitigation measures where necessary.

Impact AES-1 Have a substantial adverse effect on a scenic vista?

Impact Analysis

The proposed project would not have a substantial adverse effect on a scenic vista. The project site is in an area of the city designated for manufacturing and industrial uses and does not contain any landforms that are considered scenic by the General Plan. The Vaca Mountains and English Hills are approximately 4 to 6 miles west of the project site. Distant views of these scenic resources are obscured to motorists driving on Midway Road and I-505 due to the surrounding urban development and vegetation.

The three warehouse buildings would range from 28 feet to 40 feet in height. The development of project structures would not be considered to have a significant impact on a scenic vista because the distant views of scenic resources are already limited by the surrounding urban development and vegetation and the proposed project does not provide a view corridor. Because distant views of scenic resources are already limited at the project site, the further

reduction in viewing opportunities resulting from construction of the proposed project would be considered a less than significant impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AES-2 Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?

Impact Analysis

There are no Caltrans-designated scenic highways in the city nor are there any locally designated scenic highways identified by the General Plan (Caltrans 2017, General Plan 2015a). The project site does not contain any rock outcroppings or historic buildings, but there are trees and vegetation at the project site and concentrated along Midway Road, I-505, and Gibson Canyon Creek. Construction of the proposed project would require the removal of 27 trees at the project site, none of which are considered scenic resources within a State scenic highway. As required by Chapter 14.09.131 of the City's Municipal Code, projects requiring the removal of trees with an aggregate circumference of 31 inches or more when measured at 4.5 feet above ground level must obtain a Tree Removal Permit from the City (refer to Section 3.4, Biological Resources, for additional details regarding the City's Tree Preservation Ordinance). The Applicant would replace the removed trees and vegetation by planting approximately 177,329 square feet of landscaping at the project site. Landscape plantings would be a mix of medium- to large-scale trees, shrubs, perennials, and grasses. The landscape plantings would be placed along the perimeter of the project site to screen views of the site from neighboring land uses and to provide shade in the parking areas. The placement and type of landscaping for the proposed project would comply with the Interchange Business Policy Plan's site development standards. All landscape plantings would conform to the City's Water Efficient Landscape Regulations (Chapter 14.27.030 of the City's Municipal Code) by incorporating low-water-use plantings. Therefore, the proposed project would have a less than significant impact on scenic resources including, trees, rock outcroppings, or historic buildings within a State scenic highway.

Level of Significant Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AES-3 Substantially degrade the existing visual character or quality of the site and it surroundings?

Impact Analysis

Project construction activities would include the demolition of an existing truck maintenance building on the northeast side of APN 106-240-350 which would be removed with construction of the proposed project, removal of vegetation, site work preparation, rerouting of the SID Canal, grading, and construction of structures. The presence of construction personnel, equipment, debris, staging areas, and truck traffic would be visible to surrounding land uses over the 27-month construction period. Once construction activities are completed, all temporary construction equipment, materials, and vehicles would be removed from the project site. Therefore, due to the temporary nature of the construction activities, the proposed project would have a less than significant impact on the existing visual character and quality of the site and its surroundings.

The proposed project would change the appearance of the undeveloped site with the development of three single-story warehouse buildings with associated access roads, parking, landscaping, and utilities. In addition, the proposed project would place underground 2,025 feet of the SID Canal via a 48-inch pipe. The SID Canal would be placed within a new 25-foot ROW and rerouted north of Building 2a and Building 2b. The open channel portions of the canal would be filled with imported fill and would no longer be visible to viewers; therefore, views of the SID Canal within this portion of the project site would be altered. However, this portion of the SID Canal is a concrete channel that does not provide any aesthetic values to the project site.

The proposed project would be consistent with the intent of the Interchange Business Park Policy Plan and would conform to the City's standards for the Industrial Park Zoning District. In addition, the project design would be required to conform to the site development standards for Area II and Area III of the Interchange Business Park Policy Plan, which are intended to ensure projects are compatible with surrounding land uses. The Interchange Business Park Policy Plan allows for a height of 36 feet within 250 feet of Crocker Drive and Midway Road in Area II; therefore, Buildings 2a and 2b would be constructed at a height of no more than 36 feet, in conformance with the Interchange Business Park Policy Plan site development standards. Building materials would include painted concrete wall panels in earth tone colors, aluminum accent panels, metal finishes, and tempered and vision glass windows. The project design would be reviewed in accordance with the City's design review process, as outlined in Chapter 14.09.131 of the City's Municipal Code.

The proposed project would include planting 177,329 square feet of landscaping at the project site. Landscape plantings would be a mix of medium- to large-scale trees, shrubs, perennials, and grasses. The landscape plantings would be placed along the perimeter of the project site to screen views of the site from neighboring land uses, Midway Road, and I-505, and would be planted to provide shade in the parking areas. All landscape plantings would conform to the site

development standards for the Interchange Business Park Policy Plan and the City's Water Efficient Landscape Regulations (Chapter 14.27.030). Although the proposed project would change the visual characteristics of the project site, the proposed project would be consistent with the intent of the Interchange Business Park Policy Plan and designed in accordance with the site development standards. As such, the proposed project would be consistent with surrounding uses, and impacts related to the degradation of visual character or quality of the site would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AES-4 Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impact Analysis

The project site is predominantly undeveloped and therefore contains minimal sources of light and glare. Land uses surrounding the project site do, however, contain sources of light and glare such as exterior building lighting; parking lot lighting for the commercial, residential, and warehouse buildings; street lighting along Midway Road, Eubanks Road, and Crocker Drive; and headlights from vehicles driving on I-505, Eubanks Drive, and Midway Road.

The proposed project would include installing new sources of nighttime lighting at the project site such as exterior lighting to illuminate the building entrances, the outside of the warehouse buildings, and the parking lot areas. The proposed project would install standard parking lot fixtures up to 30 feet in height with a 4-foot-high base for safety and security purposes. The proposed project would introduce new sources of glare from reflection off building windows and truck windows.

All lighting fixtures would be installed in accordance with the site development standards for the Interchange Business Park Policy Plan and Chapters 14.09.127 and 14.09.128 of the City's Municipal Code.

Photometric calculations would be used during final design to ensure City requirements are followed. The warehouse facility would include installation of parking lot lighting. Lighting in the perimeter would be provided via new 30-foot-tall lights on a 4-foot-high base. Each pole would contain 309-watt LED lamps.

The addition of approximately 60 freestanding light poles would increase nighttime lighting at the project site. Additional lighting within the proposed parking lot would have the potential to spill onto private residences located north of Midway Road, resulting in adversely affected nighttime views. As such, Mitigation Measure AES-1 is proposed to require lighting located in the proposed parking lot to be directionally shielded in order to prevent light spillage onto neighboring land uses. Implementation of this mitigation would reduce impacts to less than significant.

In addition, the proposed project would not use building materials such as reflective glass that would cause a substantial new source of glare. The incorporation of these design features and adherence to the City's site development standards and policies would ensure that light and glare impacts associated with the proposed project are less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM AES-1: Prevent Light Spillage. All lighting within the proposed parking lot shall be shielded, recessed, or directed downward to prevent illumination of private residences along Midway Road.

Level of Significant After Mitigation

Less Than Significant Impact with Mitigation.

3.2 AGRICULTURE AND FORESTRY RESOURCES

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporation	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?	☐	☐	☐	☒
b)	Conflict with existing zoning for agricultural use or a Williamson Act contract?	☐	☐	☐	☒
c)	Conflict with existing zoning for, or cause rezoning of, forestland (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))?	☐	☐	☐	☒
d)	Result in the loss of forestland or conversion of forestland to non-forest use?	☐	☐	☐	☒
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 forestland to non-forest use?	☐	☐	☐	☒

3.2.1 Environmental Setting

The U.S. Department of Agriculture (USDA) and California Department of Conservation (CDC) monitor conversion of farmland and develop methods for categorizing farmland according to its overall agricultural capacity. Concern for the loss of important farmland led the CDC to develop the Farmland Mapping and Monitoring Program (FMMP), which classifies different agricultural soil types relating to their ability to sustain agricultural crops. The following categories include:

- **Prime Farmland.** Land with the best combination of physical and chemical features for the long-term production of agricultural crops. This land can economically produce sustained high yields when treated and managed according to modern farming methods.

- **Farmland of Statewide Importance.** Lands with a good combination of physical and chemical features but with minor shortcomings such as greater slopes or with less ability to hold and store moisture.

- **Unique Farmland.** Lands with less quality soils used for the production of the State's leading agricultural cash crops.

- **Farmland of Local Importance.** Land and other agricultural land identified by the local jurisdiction as being important.

The City of Vacaville has traditionally contained areas of land used for grazing, orchards, field, and row crops, and has since become urban and diversified (City of Vacaville 2015). The primary crops in the county are nursery stock, tomatoes, alfalfa hay, cattle, wine grapes, feeder lambs, wheat field corn, walnuts, and milk.

The project site is located primarily within public ROW along Crocker Drive and Midway Road in the Vacaville Interchange Business Park area. Additionally, the project site crosses two privately owned parcels adjacent to Crocker Drive and Midway Road and within the business park. The project site has Industrial Park and Commercial Office General Plan land use designations and is zoned Industrial Park. Parcels immediately adjacent to the project site to the south and west are designated Industrial Park. To the north, the project site is bordered by residential properties zoned as Rural Residential. Immediately to the east is I-505. The proposed project would not result in zoning changes and would be consistent with the current Industrial Park designation.

3.2.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, General Plan EIR, CDC FMMP database, historical aerial imagery of the project site; as available through Google Earth 2018, Solano County 2013-2014 Williamson Act Map, and Section 2.0, Project Description, of this ISMND. The following impact discussions consider the effects of the proposed project related to agriculture and forestry resources in the City.

3.2.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact AG-1 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?

Impact Analysis

According to the City's Zoning Map, the project site and the nearby areas to the west and south are zoned Industrial Park. The City's Municipal Code 14.09.094.030 allows grazing or crop or tree farming as an interim use on land zoned as Industrial Park (Vacaville 2018). According to the County's Zoning Map, the area north of the project area is zoned as Rural Residential. The City's General Plan EIR and the Farmland Mapping and Monitoring Program do not indicate that the project site contains prime, unique, or farmland of Statewide importance. The FMMP indicates that there is 25.5 acres of "Unique Farmland and 11 acres of "Prime Farmland" approximately 0.3 miles west of the southern end of the project area (CDC 2016). However, the construction and staging areas would not be located within the known Unique or Prime Farmland, and the proposed project would not lead to a change in zoning designation within the project site or the surrounding area that would impact the Unique or Prime Farmland. The proposed project would not result in the conversion of Prime, Unique, or Farmland of Statewide Importance. Therefore, no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-2 Conflict with existing zoning for agricultural use or a Williamson Act contract?

Impact Analysis

The project site is currently zoned Industrial Park by the City. The undeveloped parcels within and adjacent to the project site are categorized as grazing land by the FMMP. Construction would reduce the ability to graze within this area. However, disturbance to grazing would be limited to the small section of undeveloped land within the project site. Finally, the Industrial Park zoning only allows for agricultural uses like grazing as an interim use.

The Solano County 2013-2014 Williamson Act Map does not identify the project site or lands immediately adjacent to the project site as being encumbered by a Williamson Act contract. However, there is Williamson Act category "Prime Land" approximately 0.5 miles east of the project site, but this land is separated from the project site by the Putah South Canal and the

proposed project would have no impact (CDC 2014). Therefore, the proposed project would not conflict with existing agricultural zoning or with a Williamson Act contract. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-3	**Conflict with existing zoning for, or cause rezoning of, forestland (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))?**

Impact Analysis

The FMMP database identifies the project site as "Non-Enrolled Land" and "Urban and Built-Up Land" (CDC 2016). There are no forest resources on or adjoining the project site. The project site is zoned as Industrial Park, which only allows tree farming as an interim use. The proposed project would not cause these areas to be rezoned to designations that would allow for forestland and timberland production beyond interim use. Therefore, the proposed project would not conflict with existing zoning or cause rezoning of forestland or timberland zoned for timberland production as defined by Government Code section 51104(g). No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-4 Result in the loss of forestland or conversion of forestland to non-forest use?

Impact Analysis

The project site is located within the Interchange Business Park and zoned Industrial Park. There are no forestland resources on or adjoining the project site, or within the general vicinity of the project area. As such, construction of the proposed project would not result in the loss of forestland or conversion of forestland to non-forest use, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact AG-5 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 forestland to non-forest use?

Impact Analysis

The project site is zoned Industrial Park. While the FMMPP considers the undeveloped portion of the project site as grazing land, the City's zoning code only allows for agricultural uses in Industrial Park zoned land on an interim basis. The proposed project would not alter this zoning designation. The FMMP database identifies the project site as "Non-Enrolled Land" and "Urban and Built-Up Land" so the project site is not encumbered by a Williamson Act contract (CDC 2016). However, "Prime Farmland" and "Unique Farmland" have been identified approximately 0.3 miles east of the project site (CDC 2016). Impairing water related utility infrastructure could potentially impact the ability to irrigate this land and result in a conversion to non-agricultural use. The City would request utility maps from all local utility companies, and utilities that may be encountered during construction would be potholed. The data gathered by this process would allow the City to avoid impairing these utilities during construction, and the proposed project would not impact the ability to irrigate this farmland. Therefore, the proposed project would be consistent with the existing land uses and would not involve changes to the existing environment and result in the conversion of farmland to non-agricultural use, or forestland to non-forest use. Therefore, no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.3 AIR QUALITY

	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?	☐	☒	☐	☐
b)	Violate any air quality standard or contribute to an existing or projected air quality violation?	☐	☒	☐	☐
c)	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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	☐	☐	☒	☐
d)	Expose Sensitive Receptors to substantial pollutant concentrations?	☐	☒	☐	☐
e)	Create objectionable odors affecting a substantial number of people?	☐	☐	☒	☐

3.3.1 Environmental Setting

The proposed project is located within the Sacramento Valley Air Basin (SVAB). SVAB encompasses the northern California central valley, from Shasta County to northeastern Solano County. The proposed project is located in northern Solano County within the SVAB and is considered to be within the Sacramento region. The local air pollution control agency with jurisdiction over the proposed project is the Yolo-Solano Air Quality Management District (YSAQMD). The Bay Area Air Quality Management District (BAAQMD) boundaries are located approximately six miles to the south and nine miles west of the project site.

Solano County is in nonattainment of the State ozone and particulate matter (10 microns and less in diameter) (PM_{10}) and the federal 8-hour ozone and particulate matter (2.5 microns and less in diameter ($PM_{2.5}$) standard. The County is unclassified for the State $PM_{2.5}$ and federal PM_{10}. An unclassified designation indicates that air quality and other relevant information is insufficient to determine whether the area is attainment or nonattainment (California Air Resources Board [CARB] 2016). According to the YSAQMD, pollutants of concern within the district are ozone, particulate matter (PM_{10} and $PM_{2.5}$), and Toxic Air Contaminants (TACs) (YSAQMD 2015a).

Ozone is not emitted directly into the air; rather, it is a regional pollutant formed by a photochemical reaction in the atmosphere. Ozone precursors, which include reactive organic gases (ROG) and Nitrogen Oxides (NOx), react in the atmosphere in the presence of sunlight to form ozone. Significant ozone formation generally requires an adequate amount of ozone precursors in the atmosphere and several hours in a stable atmosphere with strong sunlight. The conditions for ozone formation are prevalent during the summer when thermal inversions are most likely to occur (YSAQMD 2015a).

PM levels tend to be highest during the winter months when the meteorological conditions favor the accumulation of localized pollutants. This occurs when relatively low inversion levels trap pollutants near the ground and concentrate the pollution (YSAQMD 2015a).

TACs are generally caused through anthropogenic sources, including mobile sources (transportation), stationary sources (factories, refineries, power plants) and indoor sources (building and cleaning materials) (YSAQMD 2015a).

Criteria Air Pollutants

Standards have been established for the following six pollutants:

Ozone (O_3)

According to the CARB, ozone is a pollutant that forms in the atmosphere through complex reactions between chemicals directly emitted from vehicles, industrial plants, and many other sources. Key pollutants involved in ozone formation are hydrocarbon and nitrogen oxide gases. Ozone is a highly reactive and unstable gas capable of damaging the linings of the respiratory tract. Exposure to levels of ozone above the current ambient air quality standard can lead to human health effects such as inflammation, tissue damage, and impaired functioning of the lung. Ozone exposure is also associated with symptoms such as coughing, chest tightness, shortness of breath, and the worsening of asthma symptoms. The greatest risk for harmful health effects belongs to outdoor workers, athletes, children, and others who spend greater amounts of time outdoors during smoggy periods. Elevated ozone levels can reduce crop and timber yields, as well as damage native plants (CARB 2009).

Carbon monoxide (CO)

According to the U.S. Environmental Protection Agency (EPA), “CO is a colorless, odorless gas emitted from combustion processes. Nationally and, particularly in urban areas, the majority of CO emissions to ambient air come from mobile sources. CO can cause harmful health effects by reducing oxygen delivery to the body's organs (like the heart and brain) and tissues. At extremely high levels, CO can cause death. EPA first set air quality standards for CO in 1971. For protection of both public health and welfare, EPA set an 8-hour primary standard at 9 parts per million (ppm) and a 1-hour primary standard at 35 ppm. In a review of the standards completed in 1985, EPA revoked the secondary standards (for public welfare) due to a lack of evidence of adverse effects on public welfare at or near ambient concentrations. The last review of the CO

National Ambient Air Quality Standards (NAAQS) was completed in 1994 and the EPA chose not to revise the standards at that time" (EPA 2014a).

Lead (Pb)

According to the EPA, "Pb is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been from fuels in on-road motor vehicles (such as cars and trucks) and industrial sources. As a result of EPA's regulatory efforts to remove lead from on-road motor vehicle gasoline, emissions of lead from the transportation sector dramatically declined by 95 percent between 1980 and 1999, and levels of lead in the air decreased by 94 percent between 1980 and 1999. Today, the highest levels of lead in air are usually found near lead smelters. The major sources of lead emissions to the air today are ore and metals processing and piston-engine aircraft operating on leaded aviation gasoline. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers" (EPA 2014b).

Nitrogen dioxide (NO_2)

According to the CARB, "NO_2 is a reactive, oxidizing gas capable of damaging cells lining the respiratory tract. This pollutant is also an essential ingredient in the formation of ground-level ozone pollution. NO_2 is one of the nitrogen oxides emitted from high-temperature combustion processes, such as those occurring in trucks, cars and power plants. In the presence of sunlight, complex reactions of nitrogen oxides with ozone and other air pollutants produce the majority of NO_2 in the atmosphere. Indoors, home heaters and gas stoves also produce substantial amounts of NO_2. Exposure to NO_2 along with other traffic-related pollutants, is associated with respiratory symptoms, episodes of respiratory illness and impaired lung functioning. Studies in animals have reported biochemical, structural, and cellular changes in the lung when exposed to NO_2 above the level of the current California air quality standard. Clinical studies of human subjects suggest that NO_2 exposure to levels near the current standard may worsen the effect of allergens in allergic asthmatics, especially in children" (CARB 2015a).

Particulate matter (PM_{10}, $PM_{2.5}$)

According to the CARB, "PM is a complex mixture of tiny particles that consists of dry solid fragments, solid cores with liquid coatings, and small droplets of liquid. These particles vary greatly in shape, size and chemical composition, and can be made up of many different materials such as metals, soot, soil, and dust. Particles 10 microns or less in diameter are defined as "respirable particulate matter" or "PM_{10}." Fine particles are 2.5 microns or less in diameter or "$PM_{2.5}$" and can contribute significantly to regional haze and reduction of visibility in California. Extensive research indicates that exposure to outdoor PM_{10} and $PM_{2.5}$ levels exceeding current air quality standards is associated with increased risk of hospitalization for lung and heart-related respiratory illness, including emergency room visits for asthma. PM exposure is also associated with increased risk of premature deaths, especially in the elderly and people with pre-existing cardiopulmonary disease. In children, studies have shown associations between PM exposure and reduced lung function and increased respiratory symptoms and illnesses. Besides reducing

visibility, the acidic portion of PM (nitrates, sulfates) can harm crops, forests, aquatic and other ecosystems" (CARB 2005a).

Sulfur dioxide (SO_2)

According to the EPA, "SO_2 is one of a group of highly reactive gasses known as "oxides of sulfur." The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore, and the burning of high sulfur containing fuels by locomotives, large ships, and non-road equipment. SO_2 is linked with a number of adverse effects on the respiratory system. EPA first set standards for SO_2 in 1971. EPA set a 24-hour primary standard at 140 parts per billion (ppb) and an annual average standard at 30 ppb (to protect health). EPA also set a 3-hour average secondary standard at 500 ppb (to protect the public welfare). The last review of the SO_2 NAAQS was completed in 1996 and the Agency chose not to revise the standards. In the last review, EPA also considered, but did not set, a five-minute NAAQS to protect asthmatics at elevated ventilation rates from bronchoconstriction and respiratory symptoms associated with 5 - 10 minute peaks of SO_2" (EPA 2015).

Toxic Air Contaminants (TACs)

TACs are air contaminants not included in the California Ambient Air Quality Standards (CAAQS) but are considered hazardous to human health. TACs are defined by the CARB as those pollutants that "may cause or contribute to an increase in deaths or in serious illness, or which may pose a present or potential hazard to human health."

The health effects associated with TACs are generally assessed locally rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage; TACs can also cause short-term acute effects such as eye watering, respiratory irritation, running nose, throat pain, and headaches. For evaluation purposes, TACs are separated into carcinogens and non-carcinogens. Carcinogens are assumed to have no safe threshold below which health impacts would not occur, and the cancer risk is expressed as excess cancer cases per one million exposed individuals (typically over a lifetime of exposure).

Diesel Particulate Matter

Diesel particulate matter is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases: gas and particle. 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 particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine and ultra-fine particles. The composition of these fine and ultra-fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals, and other trace elements. Diesel exhaust is emitted from a broad range of diesel

engines, such as the on-road diesel engines of trucks, buses, and cars, and off-road diesel engines that include locomotives, marine vessels, and heavy-duty equipment (EPA 2014c).

Asbestos

Asbestos is a fibrous mineral that both naturally occurs in ultramafic rock (a rock type commonly found in California) and is used as a processed component of building materials. Because asbestos has been proven to cause a number of disabling and fatal diseases, such as asbestosis and lung cancer, it is strictly regulated either based on its natural widespread occurrence or in its use as a building material. In the initial Asbestos National Emission Standards for Hazardous Air Pollutants rule promulgated in 1973, a distinction was made between building materials that would readily release asbestos fibers when damaged or disturbed (friable) and those materials that were unlikely to result in significant fiber release (non-friable). The EPA has since determined that, when severely damaged, otherwise non-friable materials can release significant amounts of asbestos fibers. Asbestos has been banned from many building materials under the Toxic Substances Control Act, the Clean Air Act, and the Consumer Product Safety Act. Naturally occurring asbestos (NOA) is known to occur in many parts of California and is commonly associated with ultramafic or serpentinite rock. According to the USGS Geologic Map, the proposed project is not located in an area known to contain ultramafic or serpentine rock (USGS 2011).

Sensitive Receptors

Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Accordingly, land uses that are typically considered to be sensitive receptors include residences, schools, childcare centers, playgrounds, retirement homes, convalescent homes, hospitals, and medical clinics. The project site would not be considered a sensitive receptor. There are existing sensitive receptors in the vicinity of the project site including other residences located to the east and north of the project site.

Air Quality Standards

According to the CARB, "Federal clean air laws require areas with unhealthy levels of ozone, inhalable particulate matter, carbon monoxide, nitrogen dioxide, and sulfur dioxide to develop plans, known as State Implementation Plans (SIPs). A SIP is a prepared by each state describing existing air quality conditions and measure that would be followed to attain and maintain federal standards. The 1990 amendments to the federal Coalition for Clean Air (CCA) set deadlines for attainment based on the severity of an area's air pollution problem" (CARB 2015b).

The SIP for the State of California is administered by the CARB, which has overall responsibility for statewide air quality maintenance and air pollution prevention. California's SIP incorporates individual federal attainment plans for each regional air district. A SIP is prepared by the regional air district and sent to the CARB to be approved and incorporated into the California SIP.

Federal attainment plans include the technical foundation for understanding air quality (e.g., emission inventories and air quality monitoring), control measures and strategies, and enforcement mechanisms.

The CARB also administers the CAAQS for the 10 air pollutants designated in the California Clean Air Act. The 10 State air pollutants are the six federal standards listed above as well as visibility-reducing particulates, hydrogen sulfide, sulfates, and vinyl chloride. The federal and State ambient air quality standards are summarized in Table 3.3-1.

Table 3.3-1: California and National Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m^3)	0.070ppm (137 µg/m^3)	
Respirable Particulate Matter	24 Hour	50 µg/m^3	150 µg/m3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	—	
Fine Particulate Matter	24 Hour	—	35 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m^3	12 µg/m^3	
Carbon Monoxide	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	—
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	—
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	—	—
Nitrogen Dioxide	1 Hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
Sulfur Dioxide	1 Hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
	3 Hour	—	—	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (for certain areas)	—

Pollutant	Averaging Time	California Standards	National Standards	
		Concentration	Primary	Secondary
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
Lead	30-Day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³	Same as Primary Standard
	Rolling 3-Month Average	—	0.15 µg/m³	
Visibility-Reducing Particles	8 Hour	See Footnote 1	No National Standards	
Sulfates	24 Hour	25 µg/m³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m³)		

Notes:
[1] - In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.
mg/m³ = milligrams per cubic meter
µg/m³ =micrograms per cubic meter
Source: CARB 2016a

As summarized in Table 3.3-2, Solano County is currently designated as nonattainment for State ozone and PM_{10} standards, as well as national ozone and $PM_{2.5}$ standards. The County is currently designated unclassified for State $PM_{2.5}$ and federal PM_{10}. The standards for CO, NO_2, SO_2, and lead are being met in the County. Due to prevailing winds, ozone emissions in Solano County tend to be generated in the Bay Area and transported east to the County. As such, the YSAQMD is included in the Sacramento Federal Nonattainment Area by the EPA. Air districts throughout the Sacramento region are involved in cooperative planning efforts to meet federal and State health standards. The YSAQMD, as part of the Sacramento region, is incorporated into the following 8-hour ozone attainment plans developed by the Sacramento Metro Air Quality Management District (SMAQMD):

- 2013 Revision – Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013).
- Milestone Report (2012).

- Revision – Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2011).
- 2009 Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2009).
- 2011 Reasonable Further Progress Plan (2008).
- Voluntary Reclassification to Severe (2008).
- 2008 Rate of Progress Plan (2006).
- Proposed $PM_{2.5}$ Implementation/Maintenance Plan and Re-Designation Request for Sacramento $PM_{2.5}$ Nonattainment Area (2013).

Table 3.3-2: Solano County Area Designations for State and National Ambient Air Quality

Criteria Pollutants	State Designation	National Designation
Ozone	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Unclassified
$PM_{2.5}$	Unclassified	Nonattainment
Carbon Monoxide	Attainment	Unclassified/Attainment
Nitrogen Dioxide	Attainment	Unclassified/Attainment
Sulfur Dioxide	Attainment	Unclassified
Sulfates	Attainment	—
Lead	Attainment	Unclassified/Attainment
Hydrogen Sulfide	Unclassified	—
Visibility Reducing Particles	Unclassified	—
Source: CARB 2016b		

Thresholds of Significance

Nearly all development projects in the Sacramento region have the potential to generate air pollutants that may increase the difficultly of attaining federal and State AAQS. Therefore, for most projects evaluation of air quality impacts is required to comply with CEQA. In order to help public agencies evaluate air quality impacts, the YSAQMD has developed the Handbook for Assessing and Mitigating Air Quality Impacts, adopted July 11, 2007. The YSAQMD's Handbook includes the recommended thresholds of significance for project-level emissions, as summarized in Table 3.3-3.

Table 3.3-3: YSAQMD Significance Thresholds

Pollutants	YSAQMD Significance Thresholds
ROG	10 tons per year
NOx	10 tons per year
PM_{10}	80 pounds per day
CO	Violation of a State ambient air quality standard for CO
Source: YSAQMD 2007	

The EPA has included the YSAQMD as a $PM_{2.5}$ nonattainment area within the Sacramento Federal Nonattainment area for $PM_{2.5}$, however, the YSAQMD has not established a threshold of significance for $PM_{2.5}$. The YSAQMD has been working in conjunction with the SMAQMD to reduce $PM_{2.5}$ within the region and revise the nonattainment status designation.

The YSAQMD has also established thresholds for development projects that have the potential to expose the public to TACs from stationary sources. If a project were to exceed the following thresholds, it would be considered to have a significant air quality impact. These thresholds are based on the YSAQMD's Risk Management Policy.

- Probability of contracting cancer for the Maximally Exposed Individual (MEI) equals to 10 in one million or more.
- Ground-level concentrations of non-carcinogenic toxic air contaminants would result in a Hazard Index equal to one for the MEI or greater.

While the YSAQMD's Risk Management Policy provides a basis for a threshold for TACs from stationary sources, this policy does not cover TACs from mobile sources. The YSAQMD has no permitting or other regulatory authority over mobile sources. While the YSAQMD continues to evaluate a threshold of significance for mobile source TAC, no specific mobile source TAC threshold is proposed at this time.

Additionally, the YSAQMD has established rules and regulations to attain and maintain State and federal air quality standards. The rules and regulations that apply to this proposed project include, but are not limited to, the following:

Rule 2.3 – Ringelmann Chart

<u>301 Requirements:</u>

301.1 A person shall not discharge into the atmosphere from any single source of emission listed under section 111 of this rule, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

a) As dark or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 301.1 a. of this rule.

301.2 Effective 6 months after the adoption of the revisions of this rule, a person shall not discharge into the atmosphere from any single source of emission whatsoever, any air contaminant, other than uncombined water vapor, for a period or periods aggregating more than three (3) minutes in any one (1) hour which is:

a) As dark or darker in shade as that designated as No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection 301.2 a. of this rule.

Rule 2-5: Nuisance

A person shall not 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 to have a natural tendency to cause injury or damage to business or property.

Rule 2.11: Particulate Matter

301 Requirement: A person shall not release or discharge into the atmosphere from any single source operation, dust, fumes, or total suspended particulate matter emissions in excess of 0.1 grain per cubic foot of gas at dry standard conditions.

Rule 2.14: Architectural Coatings

The purpose of this rule is to limit the quantity of volatile organic compounds (VOC) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the YSAQMD.

Rule 2.28: Cutback and Emulsified Asphalt

The purpose of this rule is to limit the emissions of organic compounds from the use of cutback and emulsified asphalts in paving materials, paving, and maintenance operations.

3.3.2 Methodology

Construction and operational emissions for the proposed project were modeled using the California Emissions Estimator Model (CalEEMod). The model inputs were based on information from the project design as described in Section 2.0, Project Description and CalEEMod default values. The model output and detailed assumptions are provided in Appendix A.

Methodology and thresholds for criteria air pollutant impacts and community health risk, as set forth in the YSAQMD's Handbook. The YSAQMD's screening thresholds see Table 3.3-3, and significance criteria are applicable to the proposed project. If a project exceeds the screening thresholds, it would be required to conduct a full analysis using the significance criteria set forth in the YSAQMD Handbook. 3.3.3 .

3.3.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact AIR-1 Conflict with or obstruct implementation of the applicable air quality plan?

Impact Analysis

The YSAQMD thresholds of significance for criteria pollutants are applied to evaluate regional impacts of project-specific emissions of air pollutants and their impact on the YSAQMD's ability to reach attainment. Emissions that are above these thresholds have not been accommodated in the air quality plans and would not be consistent with the air quality plans. Because the YSAQMD was designated nonattainment for ozone and $PM_{2.5}$, air quality plans have been developed for these pollutants. In addition, maintenance plans for PM_{10} and CO have been developed and approved by the EPA. Air quality modeling was performed using project-specific details to determine whether the proposed project would result in criteria air pollutant emissions in excess of the applicable thresholds of significance. The proposed project's construction-related emissions are shown in Table 3.3-4 below. The results of the unmitigated emissions modeling were compared to the YSAQMD standards of significance to determine the associated level of impact.

Construction Emissions

The proposed project would generate emissions from construction equipment exhaust, worker travel, materials and equipment deliveries, and fugitive dust. Construction would last approximately 27 months and would occur between April 2019 and July 2021.

During construction (grading), fugitive dust (PM_{10}) would be generated from earth-moving activities. The majority of fugitive dust will remain localized and will be deposited near the project site. The proposed project would involve ground disturbance but would not generate PM_{10} emissions that exceed the YSAQMD's threshold of significance; however, YSAQMD recommends that all projects implement Best Management Practices (BMPs) to reduce dust emissions and avoid localized health impacts. Mitigation Measure AIR-1 requires the application of BMPs for fugitive dust control. Implementation of Mitigation Measure AIR-1 would ensure that no significant impacts from fugitive dust would occur during construction activities.

As shown in Table 3.3-4, the proposed project's emissions would be less than the YSAQMD's thresholds of significance; therefore, impacts would be less than significant, and the proposed project would not obstruct the implementation of an applicable air quality plan.

Table 3.3-4: Construction Emissions Estimates

	ROG (tons per year)	NOx (tons per year)	PM_{10} (pounds per day)
Construction Emissions (maximum during 2018-2021)	**5.35**	**5.19**	**44.17[1]**
Operational Emissions	**3.97**	**3.94**	**11.59**
YSAQMD significance thresholds	10 tons per year	10 tons per year	80 pounds per day
Potential for project to exceed threshold	None	None	None
1. Includes mitigation for dust control.			

Operational Emissions

Operational emissions would occur over the lifetime of the proposed project and would be from two main sources: area sources and motor vehicles, or mobile sources. It was assumed that all buildings in the development would be occupied in 2021 to provide a conservative estimate of operational emissions. If a later build out year were used, the emissions would be lower due to cleaner vehicles from increasing regulations. Therefore, using an earlier year to consider full buildout of the proposed project would provide a worst-case scenario of emissions.

The pollutants of concern are ROG, NOx, and PM_{10}. The project operational emissions for the respective pollutants were calculated using CalEEMod. The YSAQMD Criteria Air Pollutant Significance thresholds were used. The results for annual and summer emissions were the highest and are presented in Table 3.3-4. The daily operational emissions would be less than significant.

The modeling performed for the proposed project included compliance with YSAQMD rules and regulations. As shown in Table 3.3-4, the project's operational emissions would not exceed the YSAQMD recommended thresholds of significance, and impacts would be considered less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM AIR-1: Application of BMPs for Fugitive Dust Control. The following conditions would be included in the General Notes and/or Grading Plan for the proposed project, under the descriptive heading "Dust and Equipment Exhaust Control" and would be implemented during construction activities:

- Visible emissions from stationary diesel-powered equipment are not allowed to exceed 40 percent opacity for more than three minutes in any one-hour, as regulated under District Rule 2.3, Ringelmann Chart.
- All material excavated, stockpiled, or graded would be sufficiently watered, treated, or covered to prevent fugitive dust from leaving the property boundaries and causing a public nuisance or a violation of an ambient air standard. Watering should occur at least twice daily, with complete site coverage.
- All areas with vehicle traffic would be watered or have dust palliative applied as necessary for regular stabilization of dust emissions.
- All onsite and construction traffic would be limited to a speed of 15 miles per hour within the project site and surrounding neighborhood.
- All land clearing, grading, earth moving, or excavation activities in the project area would be suspended as necessary to prevent excessive windblown dust when winds are expected to exceed 20 miles per hour.
- All inactive portions of the construction site would be covered, revegetated, or watered until a suitable cover is established. Alternatively, the Project Contractor may apply County-approved non-toxic soil stabilizers (according to manufacturer's specifications) to all inactive construction areas (previously graded areas which remain inactive for 96 hours) in accordance with the local grading ordinance.
- All material transported off-site would be securely covered to prevent public nuisance or there must be a minimum of two feet of freeboard in the bed of the transport vehicle.
- Paved roads adjacent to the proposed project would be swept at the end of each day or more frequently if necessary, to remove excessive or visibly raised accumulations of dirt and/or mud that may have resulted from activities at the project site.
- A publicly visible sign would be posted with the telephone number and person to contact at the City regarding dust complaints. This person would respond and take corrective action within 48 hours of a complaint or issue notification. The YSAQMD's phone number would also be visible to ensure compliance with applicable regulations.
- All unnecessary vehicle idling would be restricted adjacent to the project site for a period of five minutes.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact AIR-2 Violate any air quality standard or contribute to an existing or projected air quality violation?

Impact Analysis

Air pollutant emissions have regional effects and localized effects. This analysis assesses the regional effects of the project's criteria pollutant emissions in comparison to YSAQMD thresholds of significance for short-term construction activities. Localized emissions from project construction are also assessed.

Because Solano County is designated nonattainment for State and federal ozone standards and State PM_{10} standards. The primary pollutants of concern during project construction are ROG, NO_X, and PM_{10}.

Regional Impacts

As shown in Table 3.3-4, construction emissions are not expected to generate significant levels of pollutants during construction-related activities. Construction emissions are below the YSAQMD's thresholds of significance; therefore, the regional impact is less than significant.

Localized Impacts

Construction Fugitive Dust

During construction (grading), fugitive dust (PM_{10}) would be generated from site grading and other earth-moving activities. Most of this fugitive dust will remain localized and will be deposited near the project site. As shown in Table 3.3-4, PM_{10} emissions would not exceed the YSAMQD's threshold of significance; however, even projects not exceeding the thresholds should implement BMPs to avoid potential localized health impacts. The proposed project would incorporate dust control BMPs through implementation of Mitigation Measure AIR-1.

CO Hotspot

Localized high levels of CO (CO hotspot) are associated with traffic congestion and idling or slow-moving vehicles. YSQAMD has established the following screening threshold to determine whether a project's traffic impact would cause a potential CO hotspot at any given intersection. If either of the following criteria is true of any intersection affected by the project traffic, then the project can be said to have the potential to create a violation of the CO air quality standard:

- A traffic study for the project indicates that the peak-hour Level of Service (LOS) on one or more streets or at one or more intersections in the project vicinity will be reduced to an unacceptable LOS (typically LOS E or F); or
- A traffic study indicates that the project will substantially worsen an already existing peak-hour LOS F on one or more streets or at one or more intersections in the project vicinity. "Substantially worsen" includes situations where delay would increase by 10 seconds or more when project-generated traffic is included.

A project specific traffic impact study was prepared for the proposed project, the analysis of which can be found in section 3.16. The traffic study indicates that the proposed project would result in LOS A with peak delays of less than 10 seconds. Therefore, the proposed project would not cause a CO standard violation.

Conclusion

Although the proposed project would not exceed any quantitative threshold during construction, the YSAQMD recommends that all projects incorporate fugitive dust and emissions control measures to ensure impacts remain less than significant. Accordingly, the proposed project would incorporate Mitigation Measure AIR-1 to reduce construction impacts to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure AIR-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact AIR-3	**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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

Impact Analysis

A cumulative impact analysis considers a project over time in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed. Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants, including ozone and PM, is a result of past and present development, and, thus, cumulative impacts related to these pollutants could be considered cumulatively significant. Future attainment of standards is a function of successful implementation of YSAQMD attainment plans. Consequently, the YSAQMD's approach to cumulative thresholds of significance is relevant to whether a project's individual emissions would result in a cumulatively considerable contribution to the regional existing cumulative impacts related to air quality conditions.

According to the YSAQMD Handbook for Assessing and Mitigating Air Quality Impacts, the YSAQMD has developed control measures for stationary, area, and transportation sources of air pollution. Emissions above individual thresholds as defined in the Handbook would have a significant cumulative impact on regional air quality unless offset. As discussed above, emissions

from the proposed project would not exceed the YSAQMD recommended thresholds. In addition, the proposed project would be required to comply with all applicable YSAQMD rules and regulations. Therefore, the proposed project's individual emissions would not be expected to result in a cumulatively considerable contribution to a significant cumulative impact, and impacts would be considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact AIR-4 Expose sensitive receptors to substantial pollutant concentrations?

Impact Analysis

This discussion addresses whether the proposed project would expose sensitive receptors to substantial pollutant concentrations. The localized pollutants that could impact sensitive receptors include: NOA, construction-generated fugitive dust (PM_{10}), construction generated DPM, CO hotspots and operational-related TACs. Project construction and operational impacts are assessed separately below.

A sensitive receptor is a person in a population who is particularly susceptible to health effects due to exposure to an air contaminant. The following are land uses where sensitive receptors are typically located:

- Long-term health care facilities
- Rehabilitation centers
- Convalescent centers
- Hospitals
- Retirement homes
- Residences
- Schools, playgrounds, and childcare centers

Two scenarios have the potential for exposing sensitive receptors to TACs. The first is when a project includes a new or modified source of TACs and would be located near an existing or proposed sensitive receptor. The second scenario involves a residential or other sensitive receptor development locating near an existing or planned source of TACs. The proposed project is not considered a sensitive receptor, but because it would include the use of heavy-duty diesel trucks, it is considered a source of TACs. The nearest sensitive receptors would be the single-family homes located over 100 feet north of the project site.

Construction

Project as a Source

Construction-Generated DPM

construction activity using diesel-powered equipment emits DPM, a known carcinogen. DPM includes exhaust PM2.5. A 10-year research program (ARB 1998) demonstrated that DPM (exhaust PM2.5) from diesel-fueled engines is a human carcinogen and that chronic (long-term) inhalation exposure to DPM poses a chronic health risk. Health risks from TACs are a function of both concentration and duration of exposure. Construction diesel emissions are temporary, affecting an area for a period of weeks or months. Additionally, construction-related sources are mobile and transient in nature. SCAs 13 and 19 require the preparation of a Construction Management Plan that would implement control measures to reduce equipment exhaust, which is the primary source of DPM. Because of the temporary nature of construction emissions and with compliance with SCAs 13 and 19, construction emissions of DPM would be minimized and the potential health risk impact would be less than significant. Additionally, implementation of Mitigation Measure AIR-2 would help reduce heavy equipment idling; therefore, impacts would be less than significant with mitigation.

Construction Fugitive Dust

During construction (grading), fugitive dust (PM10) is generated. As detailed in Impact AIR-1, the project would result in a less than significant dust impact after incorporation of Mitigation Measure AIR-1. Therefore, the proposed project would not expose adjacent receptors to significant amounts of construction dust after incorporation of mitigation.

Naturally Occurring Asbestos

The California Department of Conservation and the USGS have published a guide for generally identifying areas that are likely to contain NOA. There are no NOA located in Solano County. There is no impact.

Operations

Project as a Source

CO Hotspot

As noted in the discussion of Impact AIR-2, the project is not expected to generate a CO hotspot. Therefore, the proposed project would not expose receptors to substantial CO concentrations from operational activities.

Toxic Air Contaminants

Construction

The construction equipment would emit DPM, which the CARB has identified as a carcinogen. However, the DPM emissions during construction are short-term in nature. Determination of risk from DPM is considered over a 70-year exposure time. Guidance published by the California Air Pollution Control Officers Association, Health Risk Assessments for Proposed Land Use Projects, does not include guidance for health risks from construction projects addressed in CEQA; risks near construction projects are expected to be included later when the toxic emissions from construction activities are better understood. Therefore, considering the short time frame for construction, exposure to DPM during construction is anticipated to be less than significant health impact.

Operations

The TAC emitted by the project that has the greatest potential to cause a health risk to the surrounding community is DPM from the operation of diesel-powered trucks that will access the project. DPM emissions were estimated for vehicle travel and idling within the proposed project at the loading docks as well as for vehicle travel along the highway.

The proposed project was evaluated using the latest version of EPA's AERMOD dispersion model, CARB HARP2 and EMFAC2017 programs. The health risk assessment (HRA) followed both EPA's and the Office of Environmental Health Hazards Assessment's (OEHHA) 2015 guidance document for preparing HRA's. Detailed emissions inventories and assumptions are provided in Appendix A of this ISMND.

The results of the HRA are presented below in Table 3.3-5. The cancer risk from emissions of diesel exhaust to the nearest residential receptor located north of the proposed project was 4.67 in one million over a 30-year period and 5.49 in one million over a 70-year period. This is less than significant impact.

Table 3.3-5: Health Risk Assessment

Receptor	Diesel Particulate Matter
	Cancer Risk (per million)
Residential Receptor (north of the project) – 30-year period	**4.67**
Residential Receptor (north of the project) – 70-year period	**5.49**
YSAQMD significance thresholds	10
Exceed Threshold?	No
Significant Impact?	No

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure AIR-1 is required.

MM AIR-2: Criteria Air Pollutant Controls During Construction. The project applicant shall implement all of the following applicable basic control measures for criteria air pollutants during construction of the proposed project as applicable:

a) Idling times on all diesel-fueled commercial vehicles over 10,000 lbs. shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes (as required by the California airborne toxics control measure Title 13, Section 2485, of the California Code of Regulations). Clear signage to this effect shall be provided for construction workers at all access points.

b) Idling times on all diesel-fueled off-road vehicles over 25 horsepower shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to two minutes and fleet operators must develop a written policy as required by Title 23, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations").

c) All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. Equipment check documentation should be kept at the construction site and be available for review by the City and the Bay Area Air Quality District as needed.

d) Portable equipment shall be powered by grid electricity if available. If electricity is not available, propane or natural gas generators shall be used if feasible. Diesel engines shall only be used if grid electricity is not available and propane or natural gas generators cannot meet the electrical demand.

e) All equipment to be used on the construction site shall comply with the requirements of Title 13, Section 2449, of the California Code of Regulations ("California Air Resources Board Off-Road Diesel Regulations") and upon request by the City (and the Air District if specifically requested), the project applicant shall provide written documentation that fleet requirements have been met.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact AIR-5 Create objectionable odors affecting a substantial number of people?

Impact Analysis

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they still can be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Project operations would not be anticipated to produce odorous emissions. Construction activities associated with the proposed project could result in short-term odorous emissions from diesel exhaust associated with construction equipment. However, these emissions would be intermittent and would dissipate rapidly from the source. In addition, this diesel-powered equipment would only be present on-site temporarily during construction activities. Therefore, construction would not create objectionable odors affecting a substantial number of people and the impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.4 BIOLOGICAL RESOURCES

	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 in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b)	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
c)	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
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?	☐	☐	☒	☐
e)	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
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?	☐	☒	☐	☐

3.4.1 Environmental Setting

The proposed project is in northwest Vacaville in the City's Interchange Business Park area, west of I-505 (Figure 2.0-1). The proposed project would be constructed across on privately owned parcels (APNs 106-240-210, 106-240-340, 106-240-350, and 106-240-360) designated Industrial Park and Commercial Office in the General Plan.

The project site consists of a highly disturbed wild oats grassland composed primarily of non-native plant species adjacent to industrial and urban developments, Midway Road forms the northern boundary of the project site and Vacaville's city limit, beyond which lies low-density, single-family residences. South of the project site is the southern section of the Industrial Business Park. Putah South Canal is located approximately 0.2 mile west of the project site, along which are low-density, single-family residences. I-505 is immediately adjacent to Crocker Drive and forms the eastern boundary of the project site.

3.4.2 Methodology

Background Research

Prior to conducting field surveys, background desktop research was completed to identify existing biological resources at the project site and surrounding area. Specifically, this research evaluated the potential for the project site to support special-status plant and/or wildlife species and sensitive features, such as wetlands or drainages. Special-status plant and wildlife species were defined as follows:

- Species that are listed, proposed, or designated as candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA).
- Species that are listed, proposed, or designated as candidates for listing as threatened or endangered under the California ESA.
- Wildlife species designated as Fully Protected (FP) or Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW).
- Plant species designated by California Native Plant Society (CNPS) as California Rare Plant Rank (CRPR) 1A, 1B, 2A, 2B, and 3.
- Species that meet the definition of rare, threatened, or endangered under Section 15380 of the CEQA Guidelines.
- Species that are considered taxa of special concern by local agencies.

Resources reviewed during background research include:

- CDFW BIOS California Natural Diversity Database (CNDDB) (CDFW 2018a).
- CDFW RareFind 5 CNDDB (CDFW 2018b).

- U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) (USFWS 2018).
- CNPS online version of the Inventory of Rare and Endangered Plants of California: Query for the "Allendale, California" USGS Quadrangle and eight Surrounding Quadrangles (CNPS 2018).
- Aerial photographs and topographic maps.

Reconnaissance Survey

To prepare a Biological Resources Assessment, Madrone Ecological Consulting (Madrone) conducted field surveys of a 65-acre study area that includes the entire project site on June 22 and October 6 and 19, 2017, and January 24, 2018 (Biological Resources Assessment, Appendix B). These surveys were conducted to assess the suitability of habitats on the site to support special-status species. Meandering pedestrian surveys were performed on foot throughout the study area. Additionally, Stantec biologists conducted a reconnaissance survey for the Crocker Drive Water Line Extension Project, which would occur on a portion of the project site; the survey consisted of the entirety of the LDK Warehouse Project site. The survey was conducted on June 7 and the October 5, 2017, to assess current habitat conditions and evaluate the potential for the site to support special-status species, sensitive natural communities, and jurisdictional wetland and water features. Stantec biologists conducted the survey on foot, walking meandering transects to provide visual coverage. (Davis, Tom, Stantec 2017)

Madrone also performed an aquatic resources delineation at the same 65-acre study area on June 22 and October 6 and 19, 2017, and January 24, 2018, for the Biological Resources Assessment (Aquatic Resources Delineation, Appendix D). Water features and data points were mapped in the field with a GPS unit capable of submeter accuracy (Trimble Geo XT and Arrow 100). Three-parameter data (vegetation, soils, and hydrology) were collected at each data point, documenting wetland/waters or upland status, as appropriate. The delineation map was prepared in accordance with the Updated Map and Drawing Standards for the South Pacific Division Regulatory Program. The delineation was performed in accordance with the Corps of Engineers Wetlands Delineation Manual, the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0), A Field Guide to the Identification of the Ordinary High-Water Mark in the Arid West Region of the Western United States, and the U.S. Army Corps of Engineers (USACE), Sacramento District's Minimum Standards for Acceptance of Preliminary Wetlands Delineations. USACE regulations (33 CFR 328) were used to determine the presence of Waters of the United States other than wetlands. The most recent National Wetland Plant List was used to determine the wetland indicator status of plants observed in the study area. This report has been submitted to the USACE for verification.

Additionally, Madrone performed dry-season and wet-season surveys to determine the presence of large branchiopod species within the same 65-acre study area for the Biological Resources Assessment (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C). All potential vernal pool branchiopod habitat was sampled. The dry-season surveys were conducted on December 21, 2017, and June 15, 2018, with permitted biologists

collecting the necessary samples per *Survey Guidelines for the Listed Large Branchiopods* and following take permit requirements. Samples were then analyzed in a laboratory setting following the USFWS guidelines. Wet-season surveys were conducted every 14 days between January 17, 2018, and April 25, 2018, in accordance with the USFWS guidelines and following take permit requirements. All potential large vernal pool branchiopod habitat was sampled with a 5-foot-long dip net equipped with a 12-inch D-ring and 650-micron mesh. Additional survey details and methodology are provided in Appendix C. No vernal pool branchiopods were observed.

Vegetation Communities

Developed

The project site contains multiple developed elements including paved roads, parking lots, industrial buildings, and canal access roads consisting of compacted gravel.

Wild Oats Grassland (Ruderal)

This vegetation community occurs throughout the project site. This community is disked annually, and minimal upland vegetation is present. Upland vegetation within the ruderal grassland is composed primarily of sparse, non-native annual grassland and ruderal vegetation adapted to the frequent vegetation control practices, including oats (*Avena* sp.), annual ryegrass (*Festuca perennis*), turkey mullein (*Croton setiger*), yellow star thistle (*Centaurea solstitialis*), and soft chess brome (*Bromus hordeaceus*) (Biological Resources Assessment, Appendix B). The Stantec survey identified the following species in this habitat: ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum murinum*), storks-bill filaree (*Erodium botrys*), rose-clover (*Trifolium hirtum*), and common vetch (*Vicia sativa*) (Davis, Tom, Stantec 2017).

Aquatic Features

Irrigation Canal

The aquatic resources delineation found 0.5 acre of a developed irrigation canal (Kilkenny Canal; SID Canal) in the northern section of the project site. The canal appears to have been developed in uplands as an irrigation feature independent of any of the surrounding water features. This canal is regularly maintained, lacks vegetation, and is composed of compacted dirt/gravel sides. The canal is part of the Solano Irrigation District and receives intermittent flows from Putah Canal. As a result, this feature is considered to be non-jurisdictional (Aquatic Resources Delineation; Appendix D).

Seasonal Wetlands/Vernal Pools

The aquatic resources delineation found 0.187 acre of seasonal wetlands/vernal pool habitat on the project site. The wetlands are dominated by curly dock (*Rumex crispus*), turkey mullien, common spikerush (*Eleocharis macrostachya*), annual ryegrass, and hyssop loosestrife (*Lythrum hyssopifolia*). (Aquatic Resources Delineation; Appendix D)

Ephemeral Drainage

The project site also contains 0.94 acre of the north and south forks of Gibson Canyon Creek, which are ephemeral drainages that drain into the Sacramento River through a network of canals and irrigation ditches. The north fork, which was dry during the survey, occurs in the northern portion of the site and flows from the west to the east, terminating in a culvert at I-505. The south fork runs along the southern edge of the project site and also terminates at a culvert at I-505. The aquatic resources delineation describes Gibson Canyon Creek as intermittent, with no flows observed during the July and October site visits and minimal flows in the northwestern-most segment during the December site visit. The creek crosses in and out of the study area, with four segments (0.940 acre) falling within the study area. The bed and banks of the creek are earthen, and the banks are lined with herbaceous non-native grasses and forbs including tall nutsedge (*Cyperus* sp.), spiny cocklebur (*Xanthium spinosum*), annual ryegrass, yellow star thistle, and curly dock with scattered trees and shrubs including bluegum eucalyptus (*Eucalyptus globulus*) and walnut (*Juglans* sp.), (Aquatic Resources Delineation; Appendix D). As a result, there is minimal ruderal riparian habitat present and it is entirely contained within the Gibson Canyon Creek ephemeral drainage.

Drainage Ditch

The aquatic resources delineation found 0.01 acre of a roadside drainage ditch south of Midway Road at the very north end of the project site. This ditch flows from east to west into a culvert that discharges into Gibson Canyon Creek. This ditch is mostly unvegetated. Scattered herbaceous vegetation within the ditch consists of ruderal, non-native, upland plant species including chicory (*Cichorium intybus*) and stinkwort (*Dittrichia graveolens*). This ditch receives flows from a seasonal wetland just to the east within the project site. The hydrology of the ditch is driven by runoff from the adjacent roadway. (Aquatic Resources Delineation; Appendix D).

Special-Status Species

Plants

From the results of the background research (including a search of the CNDDB for a 5-mile radius around the project alignment (CDFW 2018b), the IPaC database query (USFWS 2018), the CNPS nine quadrangle search (CNPS 2018), and any additional species included per the judgement of the evaluating biologists) and the field surveys, Stantec developed a list of 40 special-status plant species with the potential to occur on the project site. Of the 40 species evaluated, 37 species were determined to have a low or no potential to occur on the project site (Appendix E, Table 3.4-1a). The remaining three species—bearded popcorn-flower (*Plagiobothrys hystriculus*), Baker's navarretia (*Navarretia leucocephala* ssp. *Bakeri*), and dwarf downingia (*Downingia pusilla*)—were determined to have a moderate or high potential to occur on the project site (Table 3.4-1). All three of these plant species inhabit vernal pool and seasonal wetland habitat and could be present in these habitats within the project site. No special-status plant species were documented onsite during the field surveys; however, the surveys were performed outside the bloom period, and bearded popcorn flower was noted on the project site in a 2016 report

used to prepare the Stantec report (Davis, Tom, Stantec 2017). Therefore, all three species could be found onsite in the seasonal wetland habitat.

Table 3.4-1: Relevant List of Special-Status Plant Species with High and Moderate Potential to Occur in the Vicinity of the Proposed Project

Scientific Name Common Name	Status	Habitat Characteristics	Flowering Period	Recorded Occurrence within Five Miles?	Likelihood for Occurrence
Downingia pusilla Dwarf downingia	CRPR 2B.2	•Vernal pools and other depressional wetlands •Valley and foothill grassland (mesic)	March-May	Yes	**Moderate potential to occur.** Suitable habitat was identified only within in the seasonal wetlands on the project site. Additionally, the nearest recorded CNDDB occurrence is 0.9 mile southeast of the project site and the project site has continuous vernal pool habitat with this occurrence.
Navarretia leucocephala ssp. *bakeri* Baker's navarretia	CRPR 1B.1	•Mesic •Cismontane woodland •Lower montane coniferous forest •Meadows and seeps •Valley and foothill grassland •Vernal pools	April-July	Yes	**Moderate potential to occur.** Suitable habitat was identified only within in the seasonal wetlands on the project site. Additionally, the nearest recorded CNDDB occurrence is 0.3 mile southeast of the project site and the project site has continuous vernal pool habitat with this occurrence.
Plagiobothrys hystriculus Bearded popcornflower	CRPR 1.B1	• Valley and foothill grassland (mesic) • Vernal pool margins	April-May	Yes	**High potential to occur.** Suitable habitat was identified only in the seasonal wetlands on the project site. The nearest recorded CNDDB occurrence is on the project site. A 2016 survey of the site found a population on the project site in the southern section east of the industrial buildings (Davis, Tom, Stantec, 2017).

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**

Notes:

Status definitions are as follows:

USFWS designations:

FE Endangered: any species in danger of extinction throughout all or a significant portion of its range

FT Threatened: any species likely to become endangered within the foreseeable future

CDFW designations:

SE Endangered: any species in danger of extinction throughout all or a significant portion of its range

ST Threatened: any species likely to become endangered within the foreseeable future

SR Rare: any species not currently threatened with extinction, but in such small numbers throughout its range that it may become endangered if its present environment worsens

CNPS designations:

1A Species presumed extinct in California

1B Plants rare, threatened or endangered in California and elsewhere

2 Plants rare, threatened or endangered in California, but more common elsewhere

3 Plants about which we need more information - a review list

CNPS threat categories:

.1 Seriously endangered in California

.2 Fairly endangered in California

.3 Not very endangered in California.

The likelihood of occurrence (low, moderate, high) is based on habitat requirements (such as substrate, hydrology, vegetation community, and disturbance factors) and range, applied by using the following general guidelines:

Low: Habitat within the study area and/or project vicinity satisfies very few of the species' requirements and/or the range of the species overlaps with the vicinity of the study area, but not with the study area itself. The species' presence within the study area is unlikely.

Moderate: Habitat within the study area and/or study area vicinity meets some of the species' requirements and known locations for the species are found in the vicinity of the study area. Presence of the species within the study area is moderately likely.

High: Habitat within the study area and/or study area vicinity meets most or all of the species' requirements and known locations of the species are found in proximity to the study area. Presence of the species within the study area is highly likely.

Source: (Biological Resources Assessment, Appendix B), (USFWS 2018), and (CDFW 2018a,b).

Wildlife

From the results of the background research (including a search of the CNDDB for a 5-mile radius around the project alignment (CDFW 2018b), the IPaC database query (USFWS 2018), the CNPS nine quadrangle search (CNPS 2018), and any additional species included per the judgement of the evaluating biologists) and the reconnaissance survey, Stantec developed a list of 25 special-status wildlife species with the potential to occur on the project site. Of these 25 species, 11 species—vernal pool fairy shrimp (*Branchinecta lynchi*), vernal pool tadpole fairy shrimp (*Lepidurus packardi*), Swainson's hawk (*Buteo swainsoni*), northern harrier (*Circus cyaneus*), white-tailed kite (*Elanus leucurus*), loggerhead shrike (*Lanius ludovicianus*), burrowing owl (*Athene cunicularia*), pallid bat (*Antrozous pallidus*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasiurus blossevillii*), and hoary bat (*Lasiurus cinereus*)—were determined to have a high to moderate potential to occur and are discussed below (Table 3.4-2). One special-status wildlife species—white-tailed kite—was observed during the Stantec reconnaissance survey (Davis, Tom, Stantec 2017). Species with a low potential to occur are presented in Appendix F, Table 3.4-2a.

Table 3.4-2: Relevant List of Special-Status Wildlife Species with High and Moderate Potential to Occur in the Vicinity of the Proposed Project

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**CNDDB Occurrence within Five Miles?**	**Likelihood for Occurrence**
Invertebrates				
Branchinecta lynchi Vernal pool fairy shrimp	FT	Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.	Yes	**High Potential to Occur** There is suitable vernal pool habitat on the project site. Additionally, the nearest CNDDB-recorded occurrences are on the project site. However, branchiopod dry- and wet-season surveys did not find evidence of this species (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C).
Lepidurus packardi Vernal pool tadpole shrimp	FE	Vernal pools and swales containing clear to highly turbid water. Pools commonly found in grass-bottomed swales of unplowed grasslands. Some pools are mud-bottomed and highly turbid.	Yes	**High potential to occur.** Suitable vernal pool habitat is present on the project site. The nearest CNDDB-recorded occurrence is 3.5 miles southwest of the project site. However, branchiopod dry- and wet-season surveys did not find evidence of this species (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C).

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**CNDDB Occurrence within Five Miles?**	**Likelihood for Occurrence**
Birds				
Athene cunicularia Western burrowing owl	SSC	Nests in burrows (often constructed by ground squirrels) and forages in low-growing grasslands and other open, semi-arid habitats.	Yes	**Moderate potential to occur.** Suitable foraging and nesting habitat is present for burrowing owl within areas of grassland on the project site, and nesting habitat is present within ground squirrel burrows, although very few were present at the project site. Ground squirrel burrows were observed within disturbed areas along roads and the constructed berm east of Eubanks Drive. The nearest CNDDB occurrence is immediately adjacent to the project site to the east.
Buteo swainsoni Swainson's hawk	ST	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch areas. Requires adjacent suitable foraging areas such as grasslands, or alfalfa or grain fields supporting rodent populations.	Yes	**High potential to occur**. There is suitable nesting habitat for Swainson's hawks in the study area. There are multiple recent CNDDB occurrences of Swainson's hawks nesting within 2 miles of the project site.
Circus cyaneus Northern harrier	SSC	Coastal salt and freshwater marsh. Nest and forage in grasslands, from salt grass in desert sink to mountain cienagas. Nests on ground in shrubby vegetation, usually at marsh edge; nest built of a large mound of sticks in wet areas.	No	**High potential to occur.** Suitable foraging and potential nesting habitat is present as grasslands within the project site. The nearest recorded CNDDB occurrence is approximately 15 miles northwest of the project site.
Elanus leucurus White-tailed kite	FP	Associated with the herbaceous and open stages of a variety of habitat types, including open grasslands, meadows, emergent wetlands, and agricultural lands. Nests are constructed near the top of dense oaks, willows, or other tree stands located adjacent to foraging areas. The species forages in undisturbed, open grasslands, meadows, farmlands, and emergent wetlands.	Yes	**Present.** Suitable foraging habitat is present within the wild oats grassland in the project site, and nesting habitat is present in large trees on the perimeter of the site. One individual was observed foraging at the project site during the Stantec field survey (Davis, Tom, Stantec 2017).

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
Lanius ludovicianus Loggerhead shrike	SSC	Occurs in open areas with sparse trees, shrubs, and other perches.	No	**Moderate potential to occur.** The ruderal grassland throughout the project site represents suitable foraging habitat for loggerhead shrike, and the trees and shrubs at the site provide suitable nesting habitat. No CNDDB occurrences within 5 miles and none within Solano County.
Mammals				
Antrozous pallidus Pallid bat	SSC, WBWG H	Forages over many habitats; roosts in buildings, trees, rocky outcrops and rocky crevices in mines and caves.	No	**Moderate potential to occur** Suitable roosting habitat is present on the project site within tree hollows and under exfoliating bark on large trees. The nearest recorded CNDDB occurrence is approximately 12 miles northeast of the project site.
Lasionycteris noctivagans Silver-haired bat	WBWG M	Roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. It forages in open wooded areas near water features.	N/A (not recorded in CNDDB)	**Moderate potential to occur** Suitable roosting habitat is present on the project site in tree hollows and under exfoliating bark on large trees.
Lasiurus blossevillii Western red bat	SSC	Typically roosts solitarily in dense tree foliage, particularly in willows, cottonwoods, and sycamores. Strongly associated with riparian habitats, particularly mature stands of cottonwood/sycamore.	No	**Moderate potential to occur** Suitable roosting tree habitat is present on the project site. There are no CNNDB occurrences within 5 miles of the project site.
Lasiurus cinereus Hoary bat	WBWG M	Roosts primarily in foliage of both coniferous and deciduous trees at the edges of clearings	N/A (not recorded in CNDDB)	**Moderate potential to occur** Suitable roosting tree habitat is present on the project site. There are no CNNDB occurrences within 5 miles of the project site.

Status designations:

Federal

FE Listed as endangered under the federal Endangered Species Act

FT Listed as threatened under the federal Endangered Species Act

FD Delisted from the federal Endangered Species List

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
State of California FP California Fish and Game Code fully protected species SE California Fish and Game Code endangered species SSC California Fish and Wildlife species of special concern SCE Candidate for listing as endangered SCT Candidate for listing as threatened ST California Fish and Game Code threatened species Other Listings: WBWG H or M Listed as High or Medium Priority on the Western Bat Working Group (WBWG) list				
Source: (Biological Resources Assessment, Appendix B), (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C), (USFWS 2018), (Davis, Tom, Stantec 2017). and (CDFW 2018a, b).				

Vernal pool fairy shrimp. Vernal pool fairy shrimp occupy a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, and alkaline grassland valley floor pools. Although the species has been collected from large vernal pools, it tends to occur in smaller pools and is most frequently found in pools measuring less than 0.05 acre. Suitable habitat for vernal pools and seasonal wetlands was observed at the project site during the field surveys (Biological Resources Assessment, Appendix B; Stantec 2017). Protocol-level surveys were conducted to determine the absence or presence of special-status vernal pool species. These surveys did not find any vernal pool species in the seasonal wetlands within 250 feet of the project footprint (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C). Therefore, this species is not expected to occur on the project site.

Vernal pool tadpole shrimp. The vernal pool tadpole shrimp inhabits vernal pool or other seasonally ponded habitats and emerges soon after these habitats become inundated, typically after the first several storm events of the fall/winter season. The shrimp feeds on microscopic organisms and detritus, reaches maturity, and lays eggs for the next wet season. Suitable habitat for vernal pools and seasonal wetlands was observed at the project site during the field surveys (Biological Resources Assessment, Appendix B; Stantec 2017). Protocol-level surveys were conducted to determine the absence or presence of special-status vernal pool species. These surveys did not find any vernal pool species in the seasonal wetlands within 250 feet of the project footprint (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C). Therefore, this species is not expected to occur on the project site.

Swainson's hawk. Swainson's hawks are present in California during the breeding season (March through September) and winter in South America and Mexico. Multiple CNDDB occurrences were found within 2 miles of the project site (CDFW 2018a). Suitable foraging habitat is present for Swainson's hawk in the wild oats grassland on the project site, and nesting habitat is present in large trees on the perimeter of the project site.

Northern harrier. Northern harriers nest on the ground in marshes or dense fields and generally uses grasslands for foraging. Their diet consists mostly of small mammals (up to the size of small rabbits) and small birds. Suitable foraging and potential nesting habitat is present on the project

site. The nearest recorded CNDDB occurrence is approximately 15 miles northwest of the project site (CDFW 2018a).

Loggerhead shrike. Loggerhead shrikes nest in small trees and shrubs in woodland and savannah vegetation communities and forage in open habitats throughout California. The nesting season is from March through June. Suitable foraging and potential nesting habitat is present on the project site. There are no CNDDB occurrences for this species in Solano County (CDFW 2018a).

White-tailed kite. White-tailed kites nest in tall shrubs and trees and forage in grasslands, agricultural fields, and marshes. Suitable foraging habitat is present in the wild oats grassland at the project site. This species was observed foraging onsite during the Stantec field survey (Davis, Tom, Stantec 2017).

Western burrowing owl. Western burrowing owls inhabit open, dry grasslands and deserts, as well as open stages of pinyon-juniper and ponderosa pine that contain suitable small mammal burrows. Western burrowing owls typically nest in abandoned rodent burrows, particularly those of California ground squirrels, which they modify each year. The species has also been documented in open areas near human habitation, especially airports and golf courses. Burrowing owls forage in open grassland areas adjacent to nest sites.

Thirteen CNDDB occurrences of burrowing owl were documented within 5 miles of the project site (CDFW 2018a). The most recent CNDDB observation occurred in 2016, with two adults and three juveniles observed at a burrow. Suitable foraging habitat is present for burrowing owl in areas of grassland within the project site, and nesting habitat is present in ground squirrel burrows. Ground squirrel burrows were observed in disturbed areas along roads and the constructed berm east of Eubanks Drive (Davis, Tom, Stantec 2017). No burrowing owls were observed during the field surveys (Biological Resources Assessment, Appendix B; Stantec 2017).

Pallid bat. This species favors roosting sites in crevices in rock outcrops, caves, abandoned mines, hollow trees, and human-made structures such as barns, attics, and sheds. Though pallid bats are gregarious, they tend to group in smaller colonies of 10 to 100 individuals. They are nocturnal hunters and capture prey in flight, but, unlike most American bats, the species has been observed foraging for flightless insects, which it seizes after landing. Tree hollows and exfoliating bark on trees throughout the project site and any buildings on the project site represent potential roosting habitat for pallid bats. Pallid bats have not been documented in the CNDDB within 5 miles of the project site (CDFW 2018a).

Silver-haired bat Primarily considered a coastal and montane forest species, the silver-haired bat occurs in more xeric environments during winter and seasonal migrations. It roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. This insectivore's favored foraging sites include open wooded areas near water features. Tree hollows and exfoliating bark on trees throughout the project site could represent potential roosting habitat for this species. This species is not documented in the CNDDB, so no records are available for local occurrences.

Western red bat Western red bats are typically solitary, roosting primarily in the foliage of trees or shrubs. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores). Tree hollows and exfoliating bark on trees throughout the project site represent suitable roosting habitat for western red bats. Western red bats have not been documented in the CNDDB within 5 miles of the project site (CDFW 2018a).

Hoary bat This species is considered to be one of the most widespread of all American bats, with a range extending from Canada to central Chile and Argentina as well as Hawaii. Hoary bats are solitary and roost primarily in the foliage of both coniferous and deciduous trees near the ends of branches at the edge of a clearing. This species may also occasionally roost in caves, beneath a rock ledge, in a woodpecker hole, in a grey squirrel nest, under a wood plank, or clinging to the side of a building. Tree hollows and exfoliating bark on trees and buildings at the project site represent suitable roosting habitat for hoary bats. This species is not documented in the CNDDB, so no records are available for local occurrences.

Critical Habitat

No designated critical habitat is present at the project site.

3.4.3 Environmental Impact Analysis

This section discusses potential impacts on biological resources associated with the proposed project and provides mitigation measures where necessary.

Impact BIO-1	**Have a substantial adverse effect, either directly or through habitat modifications on any 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?**

Impact Analysis

<u>Special-Status Plant Species</u>

Three special-status plant species (bearded popcorn-flower, Baker's navarretia, and dwarf downingia) have a moderate to high potential to occur on the project site in the seasonal wetlands. These special-status plant species may be impacted by construction activities, including trenching, boring, and grading. Mitigation Measure BIO-1 requires pre-construction, protocol-level plant surveys to identify special-status plant species that may be present on the project site. Any special-status species identified during the surveys will be flagged and avoided, if possible, during construction. If any special-status species are identified onsite that cannot be avoided, a qualified botanist will guide crews in transplanting the individuals and transferring the top soil with the seed bank to a suitable onsite location. Top soil would also be transferred to preserve the seed bank if the construction schedule would not allow for a pre-construction survey in the appropriate blooming period. With the implementation of Mitigation Measure BIO-1, impacts to special-status plants would be less than significant.

Special-Status Wildlife Species

During the Stantec reconnaissance field survey on October 5, 2017, one special-status wildlife species (white-tailed kite) was identified onsite (Davis, Tom, Stantec 2017). In addition, the project site provides suitable habitat for Swainson's hawk, northern harrier, western burrowing owl, loggerhead shrike, and other nesting birds protected under the Migratory Bird Treaty Act (MBTA) and the California Fish and Game Code. Construction activities occurring during the nesting bird season (generally considered February 1 to August 31) could directly impact these protected species. Construction-related disturbance could also indirectly impact nesting birds by causing adults to abandon active nests, resulting in nest failure and reduced reproductive success. All construction personnel will receive environmental training in accordance with Mitigation Measure BIO-2 and will be trained to identify and avoid special-status wildlife. Additionally, Mitigation Measures BIO-3, BIO-4, and BIO-5 require preconstruction nesting bird surveys to document all nests on the project site and implementation of protective buffers around documented nests during construction to minimize disturbance to nesting birds during construction. With the implementation of Mitigation Measures BIO-2, BIO-3, BIO-4, and BIO-5, impacts to special-status and nesting bird species would be less than significant.

There is also a moderate potential for roosting bats to occur in the trees and shrubs at the project site. There is potential for the project to impact roosting bats during vegetation removal. In accordance with Mitigation Measure BIO-6, preconstruction surveys for roosting bats would be conducted. In addition, all construction personnel will receive environmental training in accordance with Mitigation Measure BIO-2 and will be trained to identify and avoid special-status wildlife. With the implementation of Mitigation Measures BIO-2 and BIO-6, the project would have a less than significant impact to roosting bats.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM BIO-1: Pre-construction Special-Status Plants Survey.

- Pre-construction special-status plant surveys shall be conducted within the blooming period of the potentially occurring special-status plants. If the construction schedule precludes a blooming period survey, the pre-construction special-status plant surveys shall be conducted 2 weeks prior to construction.
    - If any special-status species are identified during the survey, they will be flagged and avoided, if possible, during construction.
    - If any special-status species are identified on-site and cannot be avoided, a qualified botanist will guide crews in transplanting the individuals and transferring the top soil with the seed bank to a suitable onsite location.
- If the construction schedule does not allow for a pre-construction survey in the appropriate blooming period, a qualified botanist will guide crews in transferring top soil to preserve the seed bank to a suitable location onsite.

MM BIO-2: Environmental Awareness Training/Install Temporary Flagging Around Environmentally Sensitive Habitat. All construction personnel shall receive environmental training by a qualified biologist regarding special-status species at the project site (special-status plants, nesting birds, Swainson's hawk, northern harrier, burrowing owl, and special-status bats) prior to the initiation of construction activities. Training shall include how to identify special-status species and the mitigation measure that would avoid impacts. If special-status species are observed on the project site, crews shall be required to stop all work and notify their supervisor and the monitoring biologist. Before any ground-disturbing activity occurs within the project work limits, temporary construction barrier fencing and/or flagging shall be installed between the work area and environmentally sensitive habitat areas, as appropriate. Construction personnel and construction activity shall avoid areas outside the fencing. The exact location of the fencing and/or flagging shall be determined by the resident engineer coordinating with a qualified biologist, with the goal of protecting the sensitive biological resource. The fencing/flagging shall be checked regularly and maintained until all construction is complete or the potential to affect the resource has passed (i.e., nesting birds have fledged and left the nest). No construction activity shall be allowed until this condition is satisfied.

MM BIO-3: Avoid Disturbance of Nesting Birds. If project activities occur during the nesting season for native birds (February 1 to August 31), the following measures shall be implemented to avoid or minimize the potential for adverse impacts on nesting migratory birds and raptors:

- Pre-construction nesting bird survey for species protected by the MBTA and California Fish and Game Code shall be conducted by a qualified biologist within a 250-foot radius of proposed construction activities for passerines and a 500-foot radius for raptors no more than 2 weeks prior to the start of construction activities.
- If active nests are found, a qualified biologist shall determine the size of the buffers based on the nesting species and its sensitivity to disturbance. The size of the buffers may be reduced at the discretion of a qualified biologist, but no construction activities shall be permitted within the buffer if they are demonstrated to be likely to disturb nesting birds. Active nest sites shall be monitored periodically to determine time of fledging.

MM BIO-4: Avoid Disturbance of Nesting Swainson's Hawk. The following measures shall be implemented to avoid or minimize the potential for adverse impacts on nesting Swainson's hawk:

- Swainson's hawk surveys will be conducted in accordance with the Swainson's hawk Technical Advisory Committee's Guidelines (2000).

- A one-half-mile buffer for each active Swainson's hawk nest will be maintained; no construction activities shall be permitted within the buffer if they are demonstrated to be likely to disturb nesting Swainson's hawks. The size of the buffers may be reduced at the discretion of a qualified biologist, but only in consultation with the CDFW.

- If no active nests are detected, no additional mitigation is required.

MM BIO-5: Avoid Disturbance of Western Burrowing Owl. The following measures shall be implemented to avoid or minimize the potential for adverse impacts to western burrowing owl:

- A qualified biologist shall conduct a pre-construction burrowing owl survey in accordance with the Staff Report on Burrowing Owl Mitigation (CDFW 2012). If active nests or burrows are found during the pre-construction survey, the City will coordinate with CDFW and USFWS on additional protection measures, such as establishment of a buffer around the nest tree or burrow (e.g., 250 feet for active burrows of burrowing owls). No construction activity will be conducted within this zone during the nesting season (generally February through October) or until such time that the biologist determines that the nest or burrow is no longer active. The buffer zone will be marked with flagging, stakes, or other means to mark the boundary. All construction personnel will be notified of the existence of the buffer zone and shall avoid entering the buffer zone during the nesting season

- If occupied burrows of western burrowing owl are identified on the project site outside the nesting season (September 1 through January 31), a 160-foot no-disturbance buffer shall be established around the burrow until the burrow is no longer occupied. Non-invasive techniques may be used to remove owls from the burrow in coordination with CDFW if necessary to proceed with construction.

MM BIO 6: Reduce Impacts to Roosting Bats. Pre-construction roosting bat surveys shall be conducted by a qualified biologist within 14 days prior to any vegetation removal during the breeding season (April through August). If preconstruction surveys indicate that no roosts of special-status bats are present, that roosts are inactive, or that potential habitat is unoccupied, no further actions are required. If roosting bats are found, exclusion shall be conducted as recommended by a qualified bat biologist in coordination with CDFW. Once the bats have been excluded, vegetation removal may occur.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact BIO-2 Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Impact Analysis

There is marginal riparian vegetation present in Gibson Canyon Creek; however, the project will remove vegetation from within the creek. Because the project seeks to remove riparian vegetation within Gibson Canyon Creek, the City shall ensure that the Applicant apply for a Section 1600 Lake or Streambed Alteration Agreement to mitigate for all impacts. With the implementation of Mitigation Measure BIO-7, impacts to these features would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM BIO-7: Mitigate for Impacts to Water Features (CDFW). Because the proposed project will impact riparian vegetation in Gibson Canyon Creek, the Applicant shall be required to consult with CDFW and apply for the following permit:

- A Section 1600 Lake or Streambed Alteration Agreement from CDFW, and, if CDFW determines that an agreement is needed, the Applicant hall adhere to the agreement conditions.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact BIO-3	**Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

Of the jurisdictional aquatic resources mapped within the study area, a small portion of seasonal wetlands, Gibson Canyon Creek, and the drainage ditch would be affected by the proposed project, with the larger portion of these features being avoided. Exact acreages are pending USACE verification and will guide mitigation replacement amounts and ratios. Because impacts to these features cannot be avoided, the City shall ensure that the Applicant apply for permits from the applicable agencies to mitigate for all impacts. With the implementation of Mitigation Measures Bio-7 and BIO-8, impacts to these features would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure BIO-7 is required.

MM BIO-8: Mitigate for Impacts to Water Features (USACE). In addition to the Section 1600 permit required by Mitigation Measure BIO-7, the City would ensure that the Applicant apply for the following permits:

- A Clean Water Act Section 404 permit from the USACE. Waters that will be affected shall be replaced or rehabilitated on a "no-net-loss" basis. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods acceptable to the USACE.

- A Clean Water Act Section 401 water quality certification from the RWQCB. The Applicant shall adhere to the certification conditions.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact BIO-4 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?

Impact Analysis

Wildlife movement corridors are important habitats that allow wildlife to travel, migrate, or disperse between significant habitats. Wildlife movement corridors have been recognized by federal agencies such as the USFWS and the State as important habitats worthy of conservation. In general, movement corridors consist of areas of undisturbed land cover that connect larger, contiguous habitats. The project site is not part of any defined essential connectivity areas as identified in the California Essential Habitat Connectivity Project (Spencer et al. 2010).

The only potential wildlife corridor present on the project site is Gibson Canyon Creek. The project would not impede wildlife movement within Gibson Canyon Creek because box culverts will be installed under the two driveways that would allow flows to continue unimpeded. Because the project site is located in highly disturbed grassland habitat adjacent to Midway Road, I-505, and industrial development, the proposed project is not likely to interfere with the movement of any wildlife species. Impacts related to wildlife movement are considered less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact BIO-5 Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact Analysis

Trees on the project site would be removed including some within Gibson Canyon Creek. The project includes plans for replanting trees and planting drought-tolerant landscaping. City code requires that projects requiring removal of trees with a circumference greater than 31 inches at 4.5 feet above ground level apply for a tree removal permit. Additionally, the project is unlikely to, but may, remove valley oak or black walnut trees, which are considered heritage trees and

are native to the City. This is a potentially significant impact. The City would ensure that the Applicant would obtain a Tree Removal Permit prior to tree removal for the project (Mitigation Measure BIO-9). Additionally, because the trees to be removed from Gibson Canyon Creek could be within CDFW's jurisdiction, the City shall ensure that the Applicant obtain an LSAA (Mitigation Measure BIO-7), which would provide guidance for mitigation to replace riparian vegetation removed from the creek. With the implementation of Mitigation Measures BIO-7 and BIO-9, impacts to trees (including riparian vegetation) would be reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure BIO-7 is required.

MM BIO-9: Tree Removal Permit. Avoid Conflicts with Local Tree Preservation Policy. Prior to any ground-disturbing activity, the Applicant shall obtain a Tree Removal Permit from the City for the project. Work would not commence until the permit is obtained. All terms and conditions in the finalized permit shall be followed. This includes replacing trees in accordance with the ratios set by the City as required in the Tree Removal Permit.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact BIO-6	**Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or State habitat conservation plan?**

Impact Analysis

The City falls within the jurisdiction of the Solano Multispecies Habitat Conservation Plan (HCP) which was released in administrative draft form in 2012. It is not within the jurisdiction of any adopted HCPs. The Solano draft HCP encompasses the Cities of Vacaville, Fairfield, Suisun City, Vallejo, Dixon, and Rio Vista. SCWA assumes overall responsibility for coordination, reporting, and oversight of the Conservation Program. The draft HCP boundaries encompass the entire project site and has mapped the project site as within the Valley Floor Grassland and Vernal Pool natural community but also as developed vegetation and land cover type. The HCP also includes the project site in the General Plan Designated Planned Development area. (SCWA 2012)

The draft HCP has also designated the project site as being part of Zone 1 – Urban Zone. Within this zone, all development projects (defined as all ground-disturbing or habitat-disturbing projects and activities needed to accommodate urban growth) affecting draft HCP-covered species that are conducted in compliance with the goals and objectives of the draft HCP, utilize

the mitigation measures from the draft HCP, and are implemented under the authority/control of the draft HCP Plan Participants (i.e. City of Vacaville) will be authorized. (SCWA 2012)

A segment of Gibson Canyon Creek is present at the project site; the draft HCP maps Gibson Canyon Creek as a Priority Drainage (Category Conservation Area RSM 1), with the surrounding area (including most of the project site except the eastern boundary) mapped as part of a Priority Watershed. This category of drainage (Conservation Area RSM 1) includes the upper reaches of streams that have been maintained in a "natural" state with stands of riparian vegetation that are targeted for preservation, with an emphasis on avoiding and minimizing impacts to sensitive resources. These areas are addressed in the draft HCP plan sections that discuss riparian, stream, and freshwater marsh habitats. The draft HCP Conservation Strategies include two goals for riparian, stream, and freshwater marsh habitats. These are 1) provide for no net loss of natural hydrogeomorphic processes; essential ecological processes, functions, and values; species diversity; and habitat heterogeneity of riparian, stream, and freshwater marsh habitats within the draft HCP plan area, and 2) contribute to the recovery of covered species associated with the Riparian, Stream, and Freshwater Marsh Natural Community in the plan area through the preservation and expansion of existing populations, and future population expansion and re-colonization in restored areas (SCWA 2012). Through the implementation of Mitigation Measures BIO-7 and BIO-8, the project will avoid impacting riparian and stream habitats to the extent feasible. Therefore, the project does not conflict with these goals or any objectives designed for how to reach these goals.

The following four special-status species with a moderate or greater potential to occur onsite are listed as covered species under the draft HCP (SCWA 2012):

- Vernal pool fairy shrimp
- Vernal pool tadpole shrimp
- Burrowing owl
- Swainson's hawk

Additionally, the following four species, which have a moderate or greater potential to occur onsite, are listed as special management species under the draft HCP (SCWA 2012):

- Baker's navarretia
- Dwarf downingia
- Bearded popcornflower
- Northern harrier

Of the four covered species, only Swainson's hawk and burrowing owl have specific draft HCP conservation strategies listed as goals. Additional objectives to reach the goals as vernal pool fairy shrimp and vernal pool tadpole shrimp are addressed as part of the goals for the Valley Floor Grassland and Vernal Pool habitat (see below). The draft HCP goals for Swainson's hawks are to 1) contribute to the maintenance of the existing populations by preserving land in Reserve Areas, and 2) provide sufficient nesting habitat in proximity to suitable foraging habitat to support the current Swainson's hawk population within the draft HCP Plan Area (SCWA 2012). The draft HCP goals for burrowing owl are to 1) preserve and manage suitable foraging habitat in order to mitigate for lost foraging habitat in the draft HCP Plan Area, and 2) preserve the

existing nesting areas outside the developed urban areas and promote the expansion of nesting habitat/burrows in the grassland and agricultural regions of the draft HCP Plan Area (SCWA 2012). Because the proposed project would not impact Swainson's hawk nest trees or impact nesting burrowing owls with implementation of Mitigation Measures BIO-3, BIO-4, and BIO-5, and would only impact marginal foraging habitat for these species, the project would not conflict with the goals and objectives of the draft HCP.

The HCP conservation strategies include two goals for valley floor grassland and vernal pool habitat which also will serve to protect vernal pools species (including the two covered species listed above). These are to 1) establish a system of reserves and preserves that enhances essential ecological processes, functions, and values, provides for species movement and dispersal, and valley floor grassland and vernal pool ecosystem resiliency, and 2) maintain and, where possible through restoration, increase population levels and distribution of vernal pool covered species (SCWA 2012). Because the seasonal wetlands on and within 250 feet of the project site have been confirmed to not contain vernal pools species (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C), the project would not impact vernal pools or vernal pools species. Therefore, the project would not conflict with these goals or any objectives designed for reaching these goals.

Of the four special management species, only northern harrier has additional draft HCP special management actions. However, these actions are required only as part of reserve management plans. Because the project site is not within an established reserve, these management actions do not apply.

With the mitigation measures and species protection measures set forth in this section, which are in accordance with those in the draft HCP, the proposed project would not conflict with the provisions of the draft HCP. Therefore, the proposed project would not conflict with any adopted HCPs or other approved local, regional, or State habitat conservation plan. Therefore, the impacts would be less than significant with implementation of the mitigation measures.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measures BIO-3, BIO-4, BIO-5, BIO-7, and BIO-8 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

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3.5 CULTURAL RESOURCES

	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 as identified in Section 15064.5?	☐	☒	☐	☐
b)	Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☒	☐	☐
c)	Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐

3.5.1 Environmental Setting

Regulatory Context

<u>California Register of Historical Resources</u>

Under PRC Section 21083.2 of CEQA, an important archaeological or historical resource consists of an object, artifact, structure, site, or district that is listed on, or eligible for listing on, the California Register of Historical Resources (CRHR), is included in a local register of historical resources, or is determined by the lead agency to be historically significant. CRHR-eligible resources are those that can be clearly shown to meet any of the following criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in California's past.
- 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 value.
- Has yielded, or may be likely to yield, information important in prehistory or history.

Eligibility and significance can be assumed for properties that are already listed on the National Register of Historic Places (NRHP) if evidence supporting the decision is verified and applied. In addition, Points of Historical Interest nominated from January 1998 onward are to be jointly listed as Points of Historical Interest and in the CRHR. Resources listed in a local historical register or that are deemed significant in a historical resources survey, as provided under PRC Section 5024.1(g), are presumed to be historically or culturally significant unless the preponderance of evidence

demonstrates that they are not. A resource that is not listed or that is determined to be ineligible for listing on the CRHR, not included in a local register of historical resources, and not deemed significant in a historical resources survey may nonetheless be historically significant, as determined by the lead agency (PRC Section 21084.1 and Section 21098.1).

California Health and Safety Code and Public Resources Code

Broad provisions for the protection of Native American cultural resources are contained in the California Health and Safety Code, Division 7, Part 2, Chapter 5 (Sections 8010 through 8030). Several provisions of the PRC also govern archaeological finds of human remains and associated objects. Procedures are detailed under PRC Section 5097.98 through 5097.996 for actions to be taken when Native American remains are discovered. Furthermore, Section 7050.5 of the California Health and Safety Code states that any person who knowingly mutilates or disinters, wantonly disturbs, or willfully removes human remains in or from any location other than a dedicated cemetery without authority of law is guilty of a misdemeanor, except as provided in Section 5097.99 of the PRC. Any person removing human remains without authority of law or written permission of the person or persons having the right to control the remains under PRC Section 7100 has committed a public offense that is punishable by imprisonment. PRC Chapter 1.7, Section 5097.5/5097.9 (Stats. 1965, c. 1136, p. 2792), entitled Archaeological and Historical Sites, defines any unauthorized disturbance or removal of remains on public land as a misdemeanor.

Project Setting

The project site is located on the western edge of the Sacramento Valley in California's Coastal Ranges Geomorphic Province, which consists of northwest-trending mountain ranges and valleys extending from beyond the northern California border to the Transverse Ranges in Southern California. The uplifted, terraced, and wave-cut Pacific Coast defines the western edge of the province, while the Great Valley, characterized by rock beneath deep alluvial deposits, forms the eastern boundary. The Coast Ranges' underlying rocks are of the Late Jurassic to Cretaceous Age Franciscan Complex, which has led to the formation of the irregular topography seen in the region (Schoenherr 1992).

Prehistoric Context

Archaeological work during the 1920s and 1930s, based primarily on the results of excavations conducted in the lower Sacramento River Valley, led to the creation of the early cultural chronology for central California presented by Lillard et al. (1939). The chronology identified three archaeological cultures. These cultures were named Early, Transitional, and Late (Lillard et al. 1939). An antecedent to the Early Culture was postulated, but no characteristics or probable origins of this earlier culture were discussed in detail (Lillard et al. 1939).

Heizer (1949) later redefined the chronology, incorporating the three cultural groups into three temporal periods, designated the Early, Middle, and Late Horizons. Heizer, however, primarily focused his reexamination of Lillard et al. (1939) and his own new archaeological research on

the Early Horizon, which he named Windmiller. No similar analyses or new studies were performed for the Transitional and Late cultures at that time.

Ragir (1972) reanalyzed, updated, and elaborated upon the description, temporal span, and geographic distribution of Windmiller Pattern, refining the temporal range to between 4,500-2,500 B.P. The Windmiller culture described at 4,000 B.P. appears to have been both fully developed and well-integrated into the regional economy due to the presence of artifacts made of exotic materials, such as marine shell and obsidian, in the assemblage, suggesting to Ragir a maximum age of 7,000 B.P. Characteristics of the Windmiller Pattern include large and heavy stemmed and leaf-shaped projectile points commonly made of a variety of non-obsidian materials, perforate charmstones, *haliotis* and *olivella* shell beads and ornaments, trident fish spears, baked clay balls (presumably for cooking in baskets), flat slab millingstones, relatively small numbers of mortars, and ventrally extended burials oriented toward the west (Heizer 1949; Ragir 1972). The subsistence pattern of Windmiller groups probably emphasized hunting and fishing, with the groups supplementing their diets with seed and possibly acorns (Heizer 1949; Ragir 1972; Moratto 1984).

By about 4,000 B.P. Windmiller groups are firmly established in the Lower Sacramento River Valley, interacting with their neighbors to acquire obsidian from at least two Coast Ranges and three trans-Sierran sources, *haliotis* and *olivella* shells and ornaments from the coast, and quartz crystals from the Sierra Nevada foothills (Heizer 1949; Ragir 1972). It is hypothesized that the bulk of these materials were acquired through trade, but some of these materials may have been acquired as part of seasonal movements between the Central Valley and the Sierra Nevada foothills.

The succeeding Middle Horizon, named the Cosumnes Culture by Ragir (1972), was first recognized at CA-SAC-66. The Middle Horizon is characterized by tightly flexed burials with variable orientation; red ochre stains in burials; distinctive *olivella* and *haliotis* beads and ornaments; distinctive charmstones; cobble mortars; evidence of wooden mortars; numerous bone tools and ornaments; large, heavy foliate and lanceolate concave base projectile points made of non-obsidian materials; and objects of baked clay. Middle Horizon cultures are generally quite different from Windmiller, but do continue to exhibit some Windmiller characteristics, including similar projectile point forms. The similarities in projectile point forms may be indicative of cultural continuity and/or functional and adaptational success of the forms. Regardless, projectile point forms often span long periods of time and may also be found in the assemblages of presumably different cultural groups.

The Late Horizon, labeled the Hotchkiss Culture by Ragir (1972), ranges in age from 1,500 B.P. to contact. The Hotchkiss Culture primarily represents both local innovation and the blending of new cultural traits introduced into the Central Valley. It is distinguished by intensive fishing, extensive use of acorns, elaborate ceremonialism, social stratification, and cremation of the dead.

Historic Context

The historic period in California begins with early European exploration and contact between Euroamericans and indigenous peoples. In Solano County, the historic period is generally divided further into the three major periods. These are the Spanish Period (in California) from 1775 to 1822, the Mexican Period from 1822 to 1848, and the American Period from 1848 to present.

Euroamerican contact with the Patwin first occurred during a series of Spanish expeditions into the San Francisco Bay Area between 1769 and 1776. A Spanish-colonial presence was firmly established in Alta California in 1775 when Captain Juan Manuel Ayala's expedition studied the San Francisco Bay and ventured up the Sacramento and San Joaquin rivers in search of a suitable mission site. The first mission in the region, Mission Delores, was established the following year in San Francisco. Anza and Font visited groups near the project area during this period on their passage through the region in 1776 (Bolton 1930:44, 383-383). By 1806 to 1810, most of the Native Americans from the inner Bay Area had already been baptized, and peoples who lived further from the missions began to experience the same events and processes that had earlier caused the first migrations to the missions, especially cycles of famine and diseases such as measles and syphilis (Milliken 1995:172, 193,218-219).

The Mexican Period was marked by secularization as the Spanish-colonial mission system collapsed and lands fell out of mission control. Many *Patwin, Costanoans (Ohlone), Miwok, and Yokut* formed multiethnic communities around the Bay Area to maintain some aspects of their traditional lifestyle. These communities gradually shrank in size and disappeared.

By 1845, most land holdings were in the form of large ranchos as part of a Mexican land grant system that lasted until the mid-1800s. The project area is located within the boundaries of Rancho Los Putos, also called Rancho Lihuaytos, a 44,384-acre grant given to Juan Felipe Peña and Juan Manuel Cabeza Vaca in 1843 by Governor Manuel Micheltorena (Beck and Haase 1974; Ogden 1862). Deterioration of the relations between the United States and Mexico resulted in the Mexican-American War, which ended with Mexico relinquishing California to the United States under the Treaty of Guadalupe Hidalgo of 1848, ushering in the American Period.

The discovery of gold at Sutter's Mill in 1848 brought an influx of people into the northern half of California as emigrants sought gold or jobs producing goods or services for gold miners. Land use changes resulted as livestock grazed some native grasses to extinction, woodlands were cut for lumber and railroads, and mines and agriculture developed on nearly all arable lands. The area immediately surrounding the project area has been dominated by agriculture from the gold rush to the 1920s. Following the great depression, much of the surrounding countryside gradually reverted to grazing land. The city of Vacaville immediately south of the project site, however, continued to grow, albeit at a reduced rate, as did metropolitan centers throughout the Bay Area.

As California underwent sustained population growth during and after World War II, the Vacaville region's proximity to major transportation corridors and adjacency to growing defense and industrial sectors translated to a massive population increase. Despite a population of only 1,600 in 1940, Vacaville housed nearly 22,000 residents by 1970. At present, Vacaville has a

population of nearly 100,000 (US Federal Census 1940–2010). This population growth has translated to substantial modification of the agricultural landscape, with the formerly compact town sprawling in a ring surrounding its original dimensions. Light industrial and commercial development has also grown around the area's major transportation corridors, including Interstate 80 and I-505, and the 1950s Solano Project led to the development of water-related infrastructure. Thus, the city and its immediate surroundings continue to reflect an evolving landscape of both agricultural and metropolitan development.

3.5.2 Methodology

To determine the presence of cultural resources within the project site and vicinity, a Cultural Resources Inventory and Evaluation Report, prepared by ECORP Consulting, Inc., on January 28, 2018, was reviewed. The cultural resources report included a records search at the Northwest Information Center (NWIC) of the California Historical Resources Information System (CHRIS), Native American outreach, a buried site sensitivity analysis, and a pedestrian field survey of all locations of anticipated ground disturbance for construction, staging, and access. The records search and cultural resources survey were completed in accordance with the CEQA Guidelines by: 1) identifying all cultural resources within the project area; 2) offering a preliminary significance evaluation of any identified cultural resources; 3) assessing resource vulnerability to effects that could arise from project activities; and 4) offering suggestions designed to protect resource integrity, as warranted. The ECROP Consulting 2017 Cultural Resources Inventory and Evaluation Report is provided in Appendix G

Records Search and Literature Review

A records search (NWIC File No. 17-0996) was completed at the NWIC of the CHRIS, located in Rohnert Park, California. As an affiliate of the State of California Office of Historic Preservation, the NWIC is the official State repository of cultural resource records and reports for the region that includes Solano County. The search included the entire project site as well as a one-half mile buffer around the project site (referred as project area throughout this section). The following inventories were reviewed:

- California Inventory of Historic Resources (California Department of Parks and Recreation).
- California Historical Landmarks (California Office of Historic Preservation).
- California Points of Historical Interest.
- Directory of Properties in the Historic Property Data File (California Office of Historic Preservation).
- All available historic maps, including historic topographic maps and Bureau of Land Management General Land Office maps.

In addition, ECORP contacted the California Native American Heritage Commission (NAHC) on September 28, 2017, to request a search of the Sacred Lands File and a list of Native American

contacts that might have knowledge of tribal cultural resources within the project area. The request included a description of the proposed project as well as a location map. According to the cultural resources assessment, a search of the Sacred Lands File by NAHC did not indicate the presence of Native American cultural resources in the project area (ECROP Consulting 2017; Appendix G).

Records Search Results

Five studies have been conducted within the project area, and two previously recorded cultural resources were identified within the project area. The cultural resources consist of the historic-era Vaca Valley Railroad Route (P-48-001025) and the Vaca Dixon-Moraga 230 kV Transmission Line Segment (P-48-001604). An additional cultural resource (P-48-000177) was identified within a half-mile of the project area. However, one resource (the Vaca Valley Railroad Route) is no longer observable within the project area; the other resource (Vaca Dixon-Moraga 230 kV Transmission Line Segment) spans the project area and is located outside of the project area. Both resources have been evaluated for inclusion on the NRHP or CRHR, and neither are eligible.

Field Survey

ECORP conducted a pedestrian survey of the project area on October 5 and 6, 2017, to identify historic and prehistoric sites and artifacts. Most of the project site consisted of fallow, undeveloped fields that have been modified by grading, disking, and construction of the SID Canal. No additional historic properties or historic-period or prehistoric archaeological sites were observed during the field survey. No indicators of buried cultural deposits (e.g., color or texture changes, ash, carbon, or fragments of bone, shell, glass, brick, or ceramics) were identified. More information about the survey can be found in Appendix G.

Native American Outreach

Native American outreach efforts included a review of the project area by the Yocha Dehe Wintun Nation Cultural Resources Department. The Department concluded that based on the information provided, the Yocha Dehe Wintun Nation is not aware of any known cultural resources near the project area. Tribal cultural resources may include less tangible resources, such as plant gathering areas, that are not identified during archaeological surveys. These, and Native American consultation efforts, are discussed in more detail in Section 3.17, Tribal Cultural Resources.

Buried Site Sensitivity

Soils across most of the site are Corning gravelly loam and silty clay loam and San Ysidro sandy loam. The soils are very deep and well drained to moderately well-drained, respectively. They are found on terraces, footslopes, and fan remnants with slopes of 0 to 12 percent (USDA 2017). The geological landform within the western portion of the project area consists of Plio-Pleistocene and Pliocene loosely consolidated deposits (Miocene to Pleistocene), and the eastern portion consists of Quaternary alluvium and marine deposits dating from the Pliocene to the Holocene (USGS 2018) These landforms, combined with the highly disturbed nature of the

relatively level project area, staging area, and access roads, and the distance to the nearest perennial water source (Sweeneys Creek, 1.71 miles northwest of the project area) and the small unnamed intermittent creek (Gibson Canyon Creek) running through the project area, suggest a low to moderate sensitivity for buried cultural resources (Meyer and Rosenthal 2007).

3.5.3 Environmental Impact Analysis

This section discusses potential impacts on cultural resources associated with the proposed project and provides mitigation measures where necessary.

Impact CUL-1 Cause a substantial adverse change in the significance of a historical resource as identified in Section 15064.5?

Impact Analysis

The archival research and the NWIC records search performed as part of the cultural resources analysis indicated the presence of two historic resources within the project area. The field survey efforts for the project area suggests that no structures or built environment features associated with the Vaca Valley Railroad Route remain. The railroad was constructed on hand packed ground surface with the ties laid over the ground and the tracks laid on top. There was no rock ballast laid along the route. The project site has been tilled as part of vegetation management, and any indications of the route have been highly disturbed. Features of the Vaca Dixon-Moraga 230 kV Transmission Line Segment are outside the project area and would likely not be directly affected by the construction and operation of the proposed project.

However, subsurface construction activities associated with the proposed project could potentially damage or destroy previously undiscovered cultural resources. Therefore, Mitigation Measure CUL-1 is proposed, requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface historical resources, and Mitigation Measure CUL-2 is proposed to ensure that construction personnel would be aware of the procedures to follow if potential cultural resources are identified. With the implementation of Mitigation Measure CUL-1 and Mitigation Measure CUL-2, potential impacts would be reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM CUL-1: Cultural Materials Discovered During Construction. If any cultural resource is encountered during ground disturbance or subsurface construction activities (e.g., trenching, grading), all construction activities within a 50-foot radius of the identified potential resource shall cease until a Secretary of the Interior-qualified archaeologist evaluates the item for its significance and records the item on the appropriate State Department of Parks and Recreation 523 series forms. All forms and associated reports will be submitted to the NWIC of the CHRIS. The

archaeologist shall determine whether the resource requires further study. If, after the qualified archaeologist conducts appropriate technical analyses, the resource is determined to be eligible for listing on the California Register of Historical Resources as a unique archaeological resource as defined in PRC Section 15064.5, the archaeologist shall develop a plan for the treatment of the resource. The plan shall contain appropriate mitigation measures, including avoidance, preservation in place, data recovery excavation, or other appropriate measures outlined in Public Resources Code Section 21083.2.

MM CUL-2: Worker Awareness Training. Prior to the start of construction, all field personnel shall receive worker's environmental awareness training on cultural resources. The training, which may be conducted with other environmental or safety trainings, will provide a description of cultural resources that may be encountered during construction and outline the steps to follow in the event that a discovery is made.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact CUL-2 Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Impact Analysis

The archival records search performed as part of the cultural resources analysis resulted in the identification of no known prehistoric archaeological resources within or near the study area. However, two cultural resources, consisting of the historic-era Vaca Valley Railroad Route (P-48-001025) and the historic-era Vaca Dixon-Moraga 230 kV Transmission Line Segment (P-48-001604), are in the project area. The Vaca Valley Railroad Route is only vaguely observable within the northernmost project area; the Vaca Dixon-Moraga 230 kV Transmission Line Segment spans the project area but is located outside of the vertical project area. Both resources have been evaluated for inclusion on the NRHP or CRHR and neither are eligible. Additionally, ECORP reevaluated the Vaca Valley Railroad Route (P-48-001025) and concurred that it was not eligible for the NRHP or CRHR. In addition, ECORP determined that Midway Road and the Kilkenny Canal No. 3 (newly recorded and evaluated resources within the project area) are not eligible for the NRHP or CRHR. No signs of previously unidentified subsurface archaeological resources were identified within the project area during the field survey. The project site consists of fallow undeveloped fields and has been modified by grading, disking, and construction of the canal. As such, the proposed project is not anticipated to have an impact on any known or potential archaeological resources.

However, subsurface construction activities associated with the proposed project could potentially damage or destroy previously undiscovered unique archaeological resources. Therefore, Mitigation Measure CUL-1 is proposed requiring implementation of standard inadvertent discovery procedures to reduce potential impacts to previously undiscovered subsurface unique archaeological resources, and Mitigation Measure CUL-2 is proposed to ensure that construction personnel are aware of the procedures if potential unique

archaeological resources are identified. With the implementation of Mitigation Measure CUL-1 and Mitigation Measure CUL-2, potential impacts would be reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1 and Mitigation Measure CUL-2 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact CUL-3 Disturb any human remains, including those interred outside of dedicated cemeteries?

Impact Analysis

There are no known human remains within the project area, and no indications that the project location has been used for burial purposes in the past. Therefore, it is unlikely that human remains would be encountered during construction. However, ground disturbance and subsurface construction activities associated with the proposed project could potentially disturb previously undiscovered human burial sites. Mitigation Measure CUL-3 would be implemented to reduce impacts to a less than significant level by ensuring compliance with Section 7050.5 of the California Health and Safety Code and PRC 5097.98.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM CUL-3: **Human Burials Encountered During Construction.** If ground-disturbing activities uncover previously unknown human remains, Section 7050.5 of the California Health and Safety Code applies, and the following procedures shall be followed:

There shall be no further excavation or disturbance of the area where the human remains were found or within 50 feet of the find until the Solano County Coroner and the appropriate City representative are contacted. Duly authorized representatives of the Coroner and the City shall be permitted onto the project site and shall take all actions consistent with Health and Safety Code Section 7050.5 and Government Code Sections 27460, et seq. Excavation or disturbance of the area where the human remains were found or within 50 feet of the find shall not be permitted to re-commence until the Coroner determines that the remains are not subject to the provisions of law concerning investigation of the circumstances, manner, and cause of any

death. If the Coroner determines the remains are Native American, the Coroner shall contact the NAHC within 24 hours, and the NAHC shall identify the person or persons it believes to be the "most likely descendant" (MLD) of the deceased Native American. The MLD may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposing of, with appropriate dignity, the human remains and any associated grave goods as provided in PRC Section 5097.98. If the MLD does not make recommendations within 48 hours, the landowner shall reinter the remains in an area of the property secure from further disturbance. If the landowner does not accept the MLD's recommendations, the owner or the MLD may request mediation by NAHC.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.6 GEOLOGY AND SOILS

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Expose people or structures to potential 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?	☐	☒	☐	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c) Be located on strata 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?	☐	☒	☐	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property?	☐	☒	☐	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

3.6.1 Environmental Setting

Regional Setting

The City is located at the edge of two geographic provinces: the Sacramento portion of the Central Valley province and the Coast Ranges. Geologic conditions in this area are the result of activity occurring during the Mesozoic and Cenozoic eras. The physiography of the region is varied. Landforms common to the Vacaville area are the low hills and uplands to the west, and the low alluvial plains and flooded basins to the east.

The 1972 Alquist-Priolo Earthquake Fault Zoning Act requires the California Geological Survey to establish regulatory "Earthquake Fault Zones" around the surface ruptures of active faults to reduce the hazard of surface fault rupture to structures built for human occupancy. There are no Alquist-Priolo Earthquake Fault Zones in the City (City of Vacaville 2013). However, the City is located within a seismically active region, and earthquakes have the potential to cause ground shaking of significant magnitude. The Vaca-Kirby Hills Fault system, the only fault system that passes through the city, has not been active in the past 11,700 years but has shown displacement during the past 700,000 years. A fault is considered active if it has ruptured within the last 11,000 years. The Green Valley Fault system, which lies 12 miles to the southwest of Vacaville, has been active within the past 200 years. The United States Geological Survey (USGS) estimates there to be a 3 percent probability for a magnitude 6.7 or greater earthquake to occur along this fault prior to 2036. The Rogers Creek Fault, part of the Hayward Fault System, lies roughly 24 miles to the southwest of the city; this fault has an estimated 16 percent probability of producing a magnitude 6.7 or greater earthquake prior to 2036 (City of Vacaville 2015a).

Liquefaction

Soil liquefaction is a phenomenon in which loose and saturated cohesionless soils are subject to a temporary, but essentially total, loss of shear strength due to pore pressure build-up under the reversing cyclic shear stresses associated with earthquakes. Soils typically found most susceptible to liquefaction are saturated, loose, fine- to medium-grained sand having a uniform particle range. According to Special Publication 117A by the California Geological Survey, the assessment of hazards associated with potential liquefaction of soil deposits at a site must consider translational site instability (i.e., lateral spreading, etc.) and more localized hazards such as bearing failure and settlement. The acceptable factor of safety against liquefaction is recommended in SP117 to be 1.3 or greater. The city is characterized by areas of very low, low, and moderate risk of liquefaction. There are some areas in the city with a high risk and very high risk of liquefaction. Areas with a high risk or very high risk of liquefaction are generally found near the city's major water ways such as Ulatis and Alamo Creeks. According to Figure SAF-2 in the General Plan, the project site is in an area with low risk of liquefaction (City of Vacaville 2015a).

Subsidence

Subsidence is the downward shift of the ground surface relative to sea level. Subsidence typically occurs because of the dissolution of limestone, subsurface mining, extraction of natural gas, earthquakes, groundwater pumping, and fault rupture. Subsidence can occur in the city;

however, it typically occurs in areas where groundwater has been extracted (City of Vacaville 2015a).

Project Site Soils

The northeast portion of the project site contains geologic deposits from the Pliocene-aged Tehama Formation, and the remaining portion of the project site contains Pleistocene-aged Alluvial Fan deposits. The Tehama Formation consists of poorly consolidated, non-marine, gray to maroon siltstone, quartzarenite sandstone, tuff and pebble to cobble conglomerate. The alluvial fan deposits consist of varying layers of sands, silts, clays, and gravels that are poorly sorted and bedded. The subsurface soil conditions at the project site consist of poorly stratified alluvial deposits of variable thickness. The upper 12 feet of the project site consists of moderately to highly expansive, firm to very stiff sandy and silty clays and clayey silts mixed with variable amounts of sands and gravels. The upper 12 inches of the project site consists of dry and loose soils as a result of recent disking. Groundwater was not encountered at the project site during the site investigation (KC Engineering Company 2017).

Paleontological Resources

CEQA includes in its definition of historical resources "any object [or] site …that has yielded or may be likely to yield information important in prehistory" (14 CCR 15064.5[3]), which is typically interpreted as including fossil materials and other paleontological resources. More specifically, destruction of a "unique paleontological resource or site or unique geologic feature" constitutes a significant impact under CEQA per State CEQA Guidelines Appendix G. Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources at the project site, assessment of potential impacts on significant or unique resources, and development of mitigation measures for potentially significant impacts, which may include monitoring combined with data-recovery excavation and/or avoidance.

3.6.2 Methodology

A Geotechnical Exploration Report was prepared for the proposed project by KC Engineering Company on November 3, 2017. The Geotechnical Exploration Report is provided in Appendix H. The results of the geotechnical exploration report were reviewed to determine potential geology and soils impacts from the proposed project and are summarized herein. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, State, and local ordinances and regulations, as well as the General Plan's goals, policies, and actions.

Paleontological Resources

To determine the potential for paleontological resources at the project site, geologic units from maps of the area were analyzed for their potential paleontological sensitivity based on existing literature and known localities. The paleontological database at the University of California, Berkeley's Museum of Paleontology was consulted, and guidance from the Society of

Vertebrate Paleontology (SVP) guidelines was followed while conducting the paleontological review.

Society of Vertebrate Paleontology's Guidance for Assessing the Paleontological Potential of Rock Units

The SVP has identified two phases for identification of potential paleontological resources: 1) assess the potential that nonrenewable paleontological resources could be directly or indirectly impacted or destroyed by the proposed project activities, and 2) generate and implement measures to mitigate any potential impacts from proposed project activities.

The SVP classifies the potential for paleontological resources within rock units as units having high, undetermined, low, or no potential for containing paleontological resources.

High potential is characterized as "rock units from which vertebrate or significant invertebrate, plant or trace fossils have been recovered, including but not limited to sedimentary formations, some volcaniclastic formations, some low-grade metamorphic rocks which contain significant paleontological resources anywhere within their geographical extent, sedimentary rock units temporally or lithologically suitable for the preservation of fossils, rock units which contain potentially datable organic remains older than late Holocene, and rock units which may contain new vertebrate deposits, traces, or trackways" (SVP 2010). The SVP classifies underdetermined potential as "rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment" (SVP 2010). Low potential is described as "poorly represented by fossil specimens in institutional collections, or where fossils are only preserved in rare circumstances" (SVP 2010). Rock units with no potential to contain paleontological resources include high-grade metamorphic rock (e.g., gneisses, schists) and plutonic igneous rocks (e.g., granites, diorite) (SVP 2010).

Known Resources

The paleontological database at the University of California, Berkeley's Museum of Paleontology (2018), soil data from the USDA Natural Resources Conservation Service Web Soil Survey (USDA 2017), the Geologic Map of California (CDC 2010), and the local 1: 250,000 geology map (Wagner et al. 1981) were reviewed to determine the potential for paleontological resources at the project site.

3.6.3 Environmental Impact Analysis

This section discusses potential impacts related to geology and soils associated with the proposed project and provides mitigation measures where necessary.

Impact GEO-1 Expose people or structures to potential 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?

Impact Analysis

i. Fault Rupture

There are no Alquist-Priolo Earthquake Fault Zones in the city. The geotechnical exploration did not identify any mapped active or inactive faults crossing or projecting toward the project site. In addition, no evidence of active faulting was observed on the project site during the geotechnical exploration (KC Engineering Company 2017). Therefore, the potential for damage to structures at the project site due to direct fault-related surface rupture is low, and the impacts would be less than significant.

ii. Ground Shaking

The project site is in a seismically active region, and earthquake-related ground shaking is expected to occur during the design life of the proposed project. The USGS Fault Activity Map of California and the USGS National Seismic Hazard Maps—Source Parameters identifies the nearest major active faults as the Great Valley 4b Fault segment, the Green Valley Fault, and the Hunting Creek-Berryessa Fault, located approximately 3.4 miles east, 12.7 miles southwest, and 13.8 miles northwest of the project site, respectively. Other faults in the San Francisco Bay Area may also cause strong seismic ground shaking at the project site (KC Engineering Company 2017). The proposed project would be constructed in conformance with the latest edition of the California Building Code (CBC); City Municipal Code; and General Plan Policies SAF-P1.1, SAF-P1.5, SAF-P1.6, which direct the City to consider geologic conditions and seismic risk for new developments in the city. In addition, the geotechnical exploration report includes recommendations to ensure structures at the project site are designed to withstand the anticipated ground accelerations in accordance with the 2016 CBC earthquake design parameters and the American Society of Civil Engineer standards. The geotechnical recommendations, including the 2016 CBC earthquake design parameters, to support the project structures would be incorporated as part of Mitigation Measure GEO-1. Therefore, impacts related to seismic ground shaking would be less than significant with Mitigation Measure GEO-1 incorporated.

iii. Liquefaction

The geotechnical exploration found the soil profile within the upper 25 feet of the project site to consist of stiff to very stiff, fine-grained cohesive clays, and dense to very dense silty and clayey sands with no groundwater. Materials deeper than the 25-foot depth that was explored are expected to be even denser and harder. Due to the dense nature of the sands and lack of groundwater, the liquefaction potential at the site is considered very low (KC Engineering Company 2017). Therefore, based on the subsurface conditions of the project site and the results of the geotechnical investigation, impacts from liquefaction would be less than significant.

iv. Landslides

The project site and the surrounding area are relatively flat and therefore are not subject to seismically induced landslide hazards. However, during the geotechnical exploration, an erosion scar was located along the southern bank of the SID Canal in the northeastern portion of the project site. This area may be subject to additional movement during a seismic event. The geotechnical exploration report includes recommendations to place rip-rap at this portion of the project site; this recommendation is incorporated as part of Mitigation Measure GEO-1. Landslide-related impacts would therefore be less than significant with implementation of Mitigation Measure GEO-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM GEO-1: Geotechnical Design Recommendations. Prior to issuance of grading permits, the Applicant shall incorporate all design specifications and recommendations contained within the geotechnical exploration report into relevant project plans and specifications. These specifications pertain to, but are not limited to, building foundations, demolition activities, shoring activities, backfill of excavations, placement of rip-rap, and grading activities. The project site plans shall be submitted to the City for review.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-2 Result in substantial soil erosion or the loss of topsoil?

Impact Analysis

Construction activities associated with the proposed project include the removal of vegetation, demolition of structures, grading, site work, rerouting of the SID Canal, and construction of the warehouse buildings. The total volume of cut and fill on-site would be approximately 198,000

cubic yards of soil. Project construction activities would result in the temporary and permanent displacement of soils and cause potential on- or off-site erosion and sedimentation impacts. The proposed project would be required to obtain a National Pollutant Discharge Elimination System (NPDES) General Construction Permit and prepare a Stormwater Pollution Prevention Plan (SWPPP). The SWPPP must identify potential sources of erosion or sedimentation that may be reasonably expected to affect the quality of stormwater discharges and identify Best Management Practices (BMPs) that would reduce pollutants during stormwater discharges. Typical BMPs intended to control erosion include sand bags, detention basins, silt fencing, storm drain inlet protection, street sweeping, and monitoring of water bodies. The proposed project would implement the SWPPP and BMPs as part of Mitigation Measure HYD-1 to reduce potential soil erosion impacts to a less than significant impact.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-3 Be located on strata 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?

Impact Analysis

The project site is in a seismically active region and may experience ground shaking during the design life of the proposed project. The geotechnical exploration report determined impacts related to liquefaction would be less than significant due to the dense nature of the subsurface conditions and lack of groundwater evidence. The project site and surrounding area are relatively flat and therefore not subject to seismically induced landslide hazards. However, there is an erosion scar located on the southern bank of the SID Canal in the northeastern portion of the project site. The geotechnical exploration report determined this area may be subject to additional movement during a seismic event. In addition, the project site consists of near-surface undocumented fills, loose surficial soils, and highly expansive soils (KC Engineering Company 2017; Appendix H). The geotechnical exploration report included recommendations for the undocumented fills and stockpiled materials to be over-excavated and have debris removed, processed, compacted, and moisturized to reduce the potential for settlement. The recommendations included in the geotechnical exploration report would be included as part of Mitigation Measure GEO-1. Impacts related to unstable soils would be less than significant with implementation of Mitigation Measure GEO-1.

Level of Significance before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure GEO-1 is required.

Level of Significance after Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-4 Be located on expansive soil, as defined in Table 18 1 B of the Uniform Building Code, creating substantial risks to life or property?

Impact Analysis

Boring logs were taken from eight locations on the project site in accordance with American Society for Testing and Materials Designation 3550. Based on the geotechnical field exploration and laboratory testing, the surface and subsurface conditions consist of moderately to highly expansive, firm to very stiff sandy and silty clays, and clayey silts mixed with variable amounts of sands and gravels. To reduce potential impacts associated with expansive soils, the proposed project would implement Mitigation Measure GEO-1, which would incorporate the recommendations included in the geotechnical exploration report into the project site plans and specifications. The geotechnical exploration report included recommendations for the undocumented fills and stockpiled materials to be over-excavated and to have debris removed, processed, compacted, and moisturized to reduce the potential for settlement. In addition, the geotechnical exploration report included recommendations for construction activities including demolition of structures, grading, surface and subsurface drainage, building foundations, slab-on-grade construction, retaining walls, pavement areas, and general construction requirements. All soils at the project site would be suitable for use as engineered fill in accordance with the geotechnical exploration recommendations included as part of Mitigation Measure GEO-1. Therefore, impacts related to expansive soils would be less than significant with Mitigation Measure GEO-1 incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure GEO-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GEO-5 Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact Analysis

The proposed project would connect directly to the City's municipal sewer system and would not require the construction of septic tanks, or any other alternative wastewater disposal system. Therefore, no impact would occur.

Level of Significance before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance after Mitigation

No Impact.

Impact GEO-6 Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact Analysis

A search of the University of California Museum of Paleontology (2018) database for mammal fossils did not identify any paleontological resources within the project site. The closest vertebrate fossil sites to the project include an assemblage located approximately 25 miles south in the Port Chicago Clay Pits, part of the Pleistocene-age Montezuma Formation. The next nearest resource is approximately 25 miles east in Sacramento, located in the Riverbank Formation, Middle Pleistocene-aged deposits of granitic sand over stratified silts. Soils within the northwestern portion of the project site contain strata known to be geologically sensitive for the presence of paleontological resources (e.g., Plio-Pleistocene age sedimentary rock or various marine sediments); however, no mammal fossils have been recovered in or near the project site. Therefore, there is low potential for significant paleontological resources to occur at the project site. However, subsurface construction activities such as grading and excavating could potentially damage or destroy previously undiscovered paleontological resources. To reduce this potentially significant impact to a less than significant level, Mitigation Measure CUL-1 and Mitigation Measure CUl-2 would be implemented. Mitigation Measure CUL-1 and Mitigation Measure CUL-2 require the implementation of standard inadvertent discovery procedures and training of construction personnel on the procedures if potential paleontological resources are identified. Therefore, impacts related to directly or indirectly destroying a unique paleontological resource would be less than significant with incorporation of mitigation.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1 and Mitigation Measure CUL-2 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.7 GREENHOUSE GASES

	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?	☐	☒	☐	☐
b)	Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☒	☐	☐

3.7.1 Environmental Setting

The issue of combating climate change and reducing greenhouse gas emissions (GHG) has been the subject of State legislation (AB 32 and Senate Bill [SB] 375). The Governor's Office of Planning and Research has adopted changes to CEQA Guidelines, and the environmental checklist which is used for Initial Studies such as this one. The changes to the checklist, which were approved in 2010, are incorporated above in the two questions related to a project's GHG impact.

The City of Vacaville adopted its General Plan Update and Energy and Conservation Action Strategy (ECAS) on August 11, 2015. The ECAS was created for Vacaville in compliance with State requirements that address the reduction of major sources of GHG emissions. The ECAS is a detailed, long-range strategy to reduce GHG emissions and achieve greater conservation of resources with regards to transportation and land use, energy, water, solid waste, and open space. Implementation of the ECAS is intended to guide Vacaville's actions through a series of communitywide and municipal GHG emissions reduction measures to decrease the city's contribution to GHG emissions. Communitywide GHG emission reduction measures are exclusively aimed to increase energy independence; reduce spending on gas, electricity, and water; and improve air quality from non-city operations. Municipal GHG emission reduction measures apply exclusively to city operations.

Greenhouse Gases (GHGs)

GHGs and climate change are cumulative global issues. The CARB and EPA regulate GHG emissions within the State of California and the U.S., respectively. While the CARB has the primary regulatory responsibility within California for GHG emissions, local agencies can also adopt policies for GHG emission reduction.

Many chemical compounds in the earth's atmosphere act as GHGs, as they absorb and emit radiation within the thermal infrared range. When radiation from the sun reaches the earth's

surface, some of it is reflected back into the atmosphere as infrared radiation (heat). GHGs absorb this infrared radiation and trap the heat in the atmosphere. Over time, the amount of energy from the sun to the earth's surface should be approximately equal to the amount of energy radiated back into space, leaving the temperature of the earth's surface roughly constant. Many gases exhibit these "greenhouse" properties. Some of them occur in nature (water vapor, carbon dioxide (CO_2), methane [CH_4], and nitrous oxide [N_2O]), while others are exclusively human-made (like gases used for aerosols) (EPA 2014).

The principal climate change gases resulting from human activity that enter and accumulate in the atmosphere are listed below:

Carbon Dioxide

CO_2 enters the atmosphere through the burning of fossil fuels (oil, natural gas, and coal), solid waste, trees and wood products, and chemical reactions (e.g., the manufacture of cement). CO_2 is also removed from the atmosphere (or "sequestered") when it is absorbed by plants as part of the biological carbon cycle.

Methane

CH_4 is emitted during the production and transport of coal, natural gas, and oil. CH_4 emissions also result from livestock and agricultural practices and the decay of organic waste in municipal solid waste landfills.

Nitrous Oxide

N_2O is emitted during agricultural and industrial activities as well as during combustion of fossil fuels and solid waste.

Fluorinated Gases

Hydrofluorocarbons (HFCs), perfluorinated chemicals (PFCs), and Sulfur hexafluoride (SF_6) are synthetic, powerful climate-change gases that are emitted from a variety of industrial processes. Fluorinated gases are often used as substitutes for ozone-depleting substances (i.e., chlorofluorocarbons, hydrochlorofluorocarbons, and halons). These gases are typically emitted in smaller quantities, but because they are potent climate-change gases, they are sometimes referred to as high global warming potential (GWP) gases.

Emissions Inventories and Trends

California is the second-largest contributor in the U.S. of GHGs and the sixteenth-largest in the world (CARB 2014a). According to the CARB's recent GHG inventory for the State, released May 2014, California produced 459 million metric tons of carbon dioxide equivalent ($MTCO_2e$) in 2012 (CARB 2014a). The major source of GHGs in California is transportation, contributing 37 percent of the State's total GHG emissions in 2012.

Potential Environmental Impacts

For California, climate change in the form of warming has the potential to incur/exacerbate environmental impacts, including, but not limited to, changes to precipitation and runoff patterns, increased agricultural demand for water, inundation of low-lying coastal areas by sea-level rise, and increased incidents and severity of wildfire events (Moser et al. 2009). Cooling of the climate may have the opposite effects. Although certain environmental effects are widely accepted to be a potential hazard to certain locations, such as rising sea level for low-lying coastal areas, it is currently infeasible to predict all environmental effects of climate change on any one location.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on earth. A project's GHG emissions are at a micro-scale relative to global emissions but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Regulatory Requirements

California has adopted statewide legislation addressing various aspects of climate change and GHG emissions mitigation. Much of this legislation establishes a broad framework for the state's long-term GHG reduction and climate change adaptation program. The governor has also issued several executive orders (EOs) related to the state's evolving climate change policy. Of particular importance are AB 32 and SB 375, which outline the state's GHG reduction goals of achieving 1990 emissions levels by 2020 and a 40% reduction below 1990 emissions levels by 2030.

In the absence of federal regulations, control of GHGs is generally regulated at the state level and is typically approached by setting emission reduction targets for existing sources of GHGs, setting policies to promote renewable energy and increase energy efficiency, and developing statewide action plans.

3.7.2 Methodology

Thresholds

As discussed in Section 3.3, Air Quality, the proposed project is located within the YSAQMD, therefore the YSAQMD thresholds are the most appropriate to use for the proposed project; however, the YSAQMD has not established quantitative significance thresholds for GHGs. The YSAQMD recommends that Lead Agencies analyze GHGs for larger projects as a part of the full CEQA analysis. The SMAQMD, located within the same regional air basin, has established quantitative significance thresholds of 1,100 $MTCO_2e$ per year for the construction or operational phases of land use projects. Recommended thresholds were developed by the SMAQMD to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for

mitigation, thereby contributing to GHG emissions reduction goals of AB 32 and the Scoping Plan (SMAQMD 2018). The BAAQMD similarly established 1,100 $MTCO_2e$ for project operations as a screening level for ensuring 90 percent of the new GHG emissions would be reviewed and assessed for mitigation (BAAQMD 2017). Projects below the 1,100 $MTCO_2e$ would have a less than significant cumulative impact on GHGs.

Most of the Vacaville city limits are within the YSAQMD and a small part of the city limits are within the BAAQMD. The YSAQMD does not yet have its own GHG standards; however, the BAAQMD has a regional Climate Protection Program with measures to help meet GHG reductions. The YSAQMD has allowed projects to use the BAAQMD GHG emissions thresholds while the YSAQMD develops its own GHG standards and criteria. Notably, the BAAQMD GHG standards are based on AB 32 reduction targets to achieve 2020 emission limits. BAAQMD is in the process of updating its GHG thresholds.

The City of Vacaville has an adopted ECAS Plan (August 2015) that was created for the city to follow State requirements that address the reduction of major sources of GHG emissions. The ECAS established a strategy that the can be implemented by the City and the community to achieve the City's GHG emission reduction target, as identified and required by State legislation.

The ECAS identified a 21.7 percent reduction from Business-as-Usual (BAU) emission in 2020 to be consistent with the reduction target established by AB 32, which is to limit California's GHG emissions to 1990 levels by the year 2020.

The BAU forecast refers to a scenario in which neither California nor the US government adopts any measures to reduce GHG emissions.

Since the adoption of the ECAS, the State has adopted a new scoping plan to be consistent with AB 32, which identified a new GHG reduction target of 40 percent below 1990 levels by 2030.

Additionally, the California Supreme Court's decision in Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farm (2015) 224 Cal.App4th 1105 (CBD v. CDFW) also known as the "Newhall Ranch case" clarified that substantial evidence needs to be provided to document that project-level reductions in comparison to a BAU approach would be consistent achieving AB 32's overall statewide reduction goal.

The Court identified potential options for evaluating GHG impacts for individual development projects, which included the use of GHG efficiency metrics. In general, GHG efficiency metrics can be used to assess the GHG efficiency of an individual project based on a per capita basis or on a service population basis.

A GHG efficiency threshold based on service population can be calculated by dividing the GHG emissions inventory goal (allowable emissions), by the estimated service population of the individual project.

Most recently, the Supreme Court addressed the need to consider GHG reduction thresholds post-2020 in the Cleveland National Forest Foundation v. San Diego Association of Governments (*CNFF v. SANDAG*).

A project-specific GHG efficiency threshold of 1,100 $MTCO_2e$ and 5.43 $MTCO_2e$/service population (sp) was developed for the proposed project. The GHG efficiency threshold would be applicable if emissions exceed the bright-line threshold of 1,100 $MTCO_2e$. Information on the development of the threshold is included in Appendix A.

Methodology

Construction and operational emissions were estimated using CalEEMod version 2016.3.2. The model output and detailed assumptions are provided in Appendix A.

3.7.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact GHG-1 Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact Analysis

The proposed project may contribute to climate change impacts through its contribution of GHGs. The proposed project would generate a variety of GHGs during construction, including several defined by AB 32, such as CO_2, CH_4, and N_2O from the exhaust of equipment, construction hauling trips, and worker commuter trips.

Constructions Emission Inventory

Construction emissions would be generated from the exhaust of equipment and the exhaust of construction equipment and material delivery trips and worker commuter trips. $MTCO_2e$ emissions during construction of the project are presented in Table 3.7-1.

Table 3.7-1: Construction Greenhouse Gas Emissions

2018	$MTCO_2e$
Total Construction CO_2e	1,030.46
YSAQMD significance thresholds	1,100
Significant Impact?	**No**
Project-specific significance threshold	1,100
Significant Impact?	**No**

During the construction of the proposed project, approximately 1,030 $MTCO_2e$ would be emitted. Estimated construction emissions would not exceed the SMAQMD or BAAQMD recommended significance thresholds; therefore, impacts would be considered less than significant.

Operational Emission Inventory

Operational or long-term emissions occur over the life of the project. The operational emissions for the proposed project are shown in Table 3.7-2. Sources for operational emissions include:

- Motor Vehicles: These emissions refer to greenhouse gas emissions contained in the exhaust from the cars and trucks that would travel to and from the project site.
- Natural Gas: These emissions refer to the greenhouse gas emissions that occur when natural gas is burned on the project site. Natural gas uses include heating water, space heating, dryers, stoves, or other uses.
- Indirect Electricity: These emissions refer to those generated by offsite power plants to supply electricity required for the project.
- Water Transport: These emissions refer to those generated by the electricity required to transport and treat the water to be used on the project site.
- Waste: These emissions refer to the greenhouse gas emissions produced by decomposing waste generated by the project. These include: waste removed from car interior during the cleaning process; waste generated in the restrooms; and/or waste generated from the operations of the facility.

The CalEEMod default assumptions were used for each of these sources of emissions. The operational emissions are shown in Table 3.7-2.

Table 3.7-2: Operational Greenhouse Gas Emissions

Source Category	MTCO2e
Area	0.02
Energy Consumption	934
Mobile	2,589
Solid Waste Generation	352
Water Usage	507
Total	4,382
Project-Specific Operational Threshold #1	*1,100*
Potential to exceed recommend thresholds?	**Yes**
Project-Specific Operational Threshold #2 – GHG Efficiency Threshold	**5.43 MTCO2e/sp**

Source Category	MTCO2e
Project Service Population	648
Project GHG Efficiency Threshold	**6.76**
Significant Impact?	**Yes**

As shown in Table 3.7-2, operation of the proposed project would produce approximately 3,959 $MTCO_2e$ per year. This is above the bright-line threshold of 1,100 $MTCO_2e$ per year, therefore to determine potential significance the GHG efficiency threshold for the proposed project is estimated. As shown in Table 3.7-2, the proposed project's GHG efficiency threshold of 6.10 MTCO2e/sp is greater than the project-specific GHG efficiency threshold of 5.43 MTCO2e, therefore this is a potentially significant impact and mitigation is required. Mitigation Measure GHG-1 would be implemented to reduce impacts to less than significant.

The following measures would be incorporated into the proposed project:

- Implementing a Voluntary trip reduction measures for employees.
- Marketing commute trip reduction options.
- Exceeding Title 24 by 25 percent.
- Installing High-efficiency lighting.
- Applying water conservation strategies indoor and outdoor.
- Reducing solid waste.

Additionally, the proposed project includes the following locational measures that result in GHG reductions as determined by CalEEMod and the California Air Pollution Control Officers Association's Quantifying GHG Reduction Measures:

- Locating near diversity uses (residential, commercial, etc.).
- Being a job center.
- Improving the pedestrian network on the project-site and connecting off-site.

Table 3.7-3 shows the mitigated GHG operational emissions.

Table 3.7-3: Mitigated Operational Greenhouse Gas Emissions

Source Category	MTCO2e
Area	0.02
Energy Consumption	636
Mobile	2,286
Solid Waste Generation	141
Water Usage	405
Total	3,469
Project-Specific Operational Threshold #1	*1,100*
Potential to exceed recommend thresholds?	**Yes**
Project-Specific Operational Threshold #2 – GHG Efficiency Threshold	**5.43 MTCO2e/sp**
Project Service Population	648
Project GHG Efficiency Threshold	**5.35**
Significant Impact?	**No**

Although the proposed project would exceed the bright-line screening threshold of 1,100 MTCO2e it does not exceed the GHG efficiency threshold; therefore, the proposed project would have a less than significant impact on GHG emissions.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM GHG-1: **Greenhouse Gas Reduction Measures.** The Applicant shall ensure that the following measures are incorporated into the proposed project:

- Implement voluntary trip reduction measures.
- Provide ride-sharing program information.
- Implement commute trip reduction marketing.
- Reduce indoor water usage compared to similar developments by 20 percent.

- Reduce outdoor water usage compared to similar developments by 10 percent.
- Increase energy efficiency by 25 percent over the 2016 California energy standards.
- Reduce solid waste by 60 percent compared to similar development.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact GHG-2 Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact Analysis

The California Air Resources Board (CARB) adopted its Scoping Plan with measures and other federal, State, and local efforts to reduce GHG emissions by 2020. None of the measures listed in the plan directly relate to construction activity. Although the Scoping Plan does include some measures that would indirectly address GHG emissions levels associated with construction activity—including the phasing in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a Low Carbon Fuel Standard—successful implementation of these measures would predominantly depend on the development of future laws and policies at the State level. The proposed project would comply with any mandate or standards set forth by the Scoping Plan update.

In 2015, the City of Vacaville adopted an ECAS to address the reduction of major sources of GHG emissions. An emission target was adopted of 21.7 percent below Vacaville's 2020 business as usual forecast. The 21.7 percent was established to be consistent with CARB's 2020 reduction target. To meet this goal, the City of Vacaville adopted communitywide measures to reduce emissions. Communitywide measures include the following sectors: transportation and land use, green building, renewable energy and low carbon fuels, energy conservation, water and wastewater, solid waste, parks, open space and agriculture, purchasing, and community action. The proposed project would comply with all relevant measures in the Energy and Conservation Strategy.

Since the adoption of the ECAS, the CARB has adopted a new scoping plan (2017 Scoping Plan) to be consistent with AB 32, which identified a new GHG reduction target of 40 percent below 1990 levels by 2030.

Because the project would become operational post-2020 a project-specific threshold was developed (see Appendix A). If the proposed project is less than the GHG efficiency threshold then it would be consistent with the emission reductions needed to achieve the AB 32 emissions target and would not conflict with any adopted plans for GHG reductions.

As discussed in Impact GHG-1, the project's operational emissions would exceed the GHG efficiency threshold adopted for the project, resulting in a potentially significant impact. Mitigation Measure GHG-1 would be incorporated into the proposed project to reduce GHG

emissions. As shown in Table 3.7-3, the proposed project's mitigated emissions would result in a GHG efficiency threshold of 5.35 $MTCO_2e$/sp, which is less than the 5.43 $MTCO_2e$/sp threshold for the project. As such, the proposed project would not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, the impact would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure GHG-1 would be required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.8 HAZARDS AND HAZARDOUS MATERIALS

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?	☐	☒	☐	☐
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?	☐	☒	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely-hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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?	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☒	☐	☐

3.8.1 Environmental Setting

Hazardous materials, as defined by the California Code of Regulations, are substances with certain physical properties that could pose a substantial present or future hazard to human health or the environment when improperly handled, disposed of, or otherwise managed. Hazardous materials are grouped into the following four categories, based on their properties:

- Toxic – Causes Human Health Effects
- Ignitable – Has the Ability to Burn
- Corrosive – Causes Severe Burns or Damage to Materials
- Reactive – Causes Explosions or Generates Toxic Gases

Hazardous waste is any hazardous material that is discarded, abandoned, or slated to be recycled. The criteria that define a material as hazardous also define a waste as hazardous. If improperly handled, hazardous materials and hazardous waste can result in public health hazards if released into the soil or groundwater or through airborne releases in vapors, fumes, or dust. Soil and groundwater having concentrations of hazardous constituents higher than specific regulatory levels must be handled and disposed of as hazardous waste when excavated or pumped from an aquifer. California Government Code, Title 22, Sections 66261.20–24 contains technical descriptions of toxic characteristics that could cause soil or groundwater to be classified as hazardous waste.

California Government Code, Section 65962.5 requires the California Environmental Protection Agency to compile, maintain, and update specified lists of hazardous material release sites. CEQA (California Public Resources Code, Section 21092.6) requires the Lead Agency to consult the lists compiled pursuant to California Government Code, Section 65962.5, to determine whether a project and any alternatives are identified on a federal or State listing database of hazardous material release sites. The lists of hazardous material release sites are commonly referred to as the "Cortese List" after the legislator who authorized the legislation. Because the statute was enacted more than 20 years ago, some of the provisions refer to agency activities that were conducted many years ago and are no longer being implemented and, in some cases, the information required in the Cortese List does not exist. Those requesting a copy of the

Cortese List are now referred directly to the appropriate information resources contained on internet websites hosted by the boards or departments referenced in the statute, including the online EnviroStor database from the Department of Toxic Substances Control (DTSC) and the online GeoTracker database offered by the State Water Resources Control Board (SWRCB). These two databases show hazardous material release sites, along with other categories of sites or facilities specific to each agency's jurisdiction.

Federal regulations and regulations adopted by the YSAQMD apply to the identification and treatment of hazardous materials during demolition and construction activities. Failure to comply with the regulations regarding asbestos and dust control may result in a Notice of Violation issued by the YSAQMD (YSAQMD 2016), civil penalties under State and/or federal law, and possible action by the Environmental Protection Agency under federal law. Federal law covers several different activities involving asbestos, including demolition and renovation of structures (40 CFR § 61.145). The California Department of Conservation and USGS map NOA areas throughout the State of California for research purposes.

The project site is in the City's Interchange Business Park Policy Plan area. A Phase I Environmental Site Assessment (Phase I) was prepared for the project site by Stantec on September 7, 2017. The Phase I assessment identified several listings near the project site of Leaking Underground Storage Tank (LUST) cases. Leaks were detected at the former SaveMart Distribution Center (700 Crocker Drive) and the Mariani Packing Company (500 Crocker Drive) (SWRCB 2015a; SWRCB 2015b). In addition, a third LUST site was identified north of the project site at the Oates Country Store property (4819 Midway Road) (SWRCB 2015c). All three LUST sites have been remediated and issued a remedial action certificate by the Solano County Department of Environmental Management (Stantec 2017).

The proposed project is located about 2 miles north of the Nut Tree Airport and does not lie within its influence area. The proposed project is located about 9 miles north of Travis Air Force Base and does not lie within its influence area. The proposed project is located about 3 miles north of the Vaca Valley Hospital Heliport and about 2 miles northwest of the Kaiser Vacaville Heliport (Tollfree Airline 2015). Chapter 14.09.134 of the City's Municipal Code regulates land-use activity on all properties in the Nut Tree Airport Compatibility Areas and the Travis Air Force Base Area of Influence.

There are no wildlands located in the city. The California Department of Forestry and Fire Protection evaluates fire hazard severity risks according to areas of responsibility (i.e., federal, State, and local). The north portion of the project site, along Midway Road, and the east boundary of the project site, along I-505, are within a moderate fire hazard severity zone (City of Vacaville 2015a).

3.8.1 Methodology

The Phase I assessment is provided in Appendix I. The results of the Phase I assessment were reviewed to determine potential hazards and hazardous materials impacts from the proposed project and are summarized herein. This analysis considers the range and nature of foreseeable hazardous materials use, storage, and disposal that would result from the proposed project and

identifies whether these hazardous materials could expose individuals or the environment to health and safety risks. Local and State agencies would be expected to continue to enforce applicable requirements to the same extent they currently do. This analysis assumes that the proposed project would comply with relevant federal, State, and local ordinances and regulations, as well as the General Plan's goals, policies, and actions.

3.8.2 Environmental Impact Analysis

This section discusses potential impacts related to hazards and hazardous materials associated with the proposed project and provides mitigation measures where necessary.

Impact HAZ-1 Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact Analysis

During construction, the proposed project would involve the minor routine transport and handling of hazardous substances including but not limited to, gasoline, diesel fuel, hydraulic fluids, paints, building materials, finishing materials, pesticides, and fertilizers. The storage and handling of these materials would be managed in accordance with applicable federal, State, and local regulations.

The proposed project would demolish the covered truck trailer parking area on the southeast portion of the project site. The former SaveMart Distribution Center was constructed in 1977, and the covered truck trailer parking structure may therefore contain asbestos or lead-based paint. Prior to demolition activities, the Applicant would retain a certified hazardous waste contractor to determine the presence or absence of hazardous materials in the truck trailer parking structure. Review of the structure by a certified hazardous waste contractor would be incorporated as Mitigation Measure HAZ-1, which requires that all hazardous materials be properly removed and disposed of by the certified contractor. Therefore, the impact of the routine transport, storage, use, or disposal of hazardous materials during project construction activities would be less than significant with implementation of Mitigation Measure HAZ-1.

Once the proposed project is constructed, hazardous materials would be limited to those associated with a warehouse distribution facility including, but not limited to, cleaners, paints, and solvents, and fertilizers and pesticides used for landscape maintenance activities. These materials would be used in very limited quantities and would not be considered a hazard to the public. Project operations would adhere to applicable federal, State, and local regulations. The impacts related to the routine transport, storage, use, and disposal of hazardous materials during project operation would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM HAZ-1: Asbestos and Lead-based Paint. Prior to demolition of any structures located on the project site, the Applicant shall retain a certified hazardous waste contractor to determine the presence or absence of building materials or equipment that contains hazardous waste, including, but not limited to, asbestos and lead-based paint. If such substances are found to be present, the contractor shall properly remove and dispose of these hazardous materials in accordance with federal, State, and local regulations. All removal activities shall be completed prior to commencement of demolition activities. Following completion of removal activities, the Applicant shall submit documentation to the City verifying that all hazardous materials were properly removed and disposed of.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact HAZ-2 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?

Impact Analysis

Project construction and operation activities would involve the minor use of hazardous materials including gasoline, diesel fuel, hydraulic fluids, paints, building materials, finishing materials, pesticides, and fertilizers. The use of these materials during project construction and operation activities would be in accordance with applicable federal, State, and local laws. Based on the age of the former SaveMart Distribution Center, the truck trailer parking structure may contain asbestos or lead-based paint, which can become a hazard if disturbed. Mitigation Measure HAZ-1 requires the Applicant to retain a certified hazardous waste contractor to determine the presence or absence of hazardous materials in structures that would be demolished as part of the proposed project. All hazardous materials would be properly removed and disposed of by the certified contractor in accordance with applicable federal, State, and local regulations. In addition, Mitigation Measure HYD-1 requires the Applicant to implement a SWPPP during construction activities to prevent contaminated runoff from leaving the project site. Impacts related to the release of hazardous materials into the environment would therefore be less than significant with implementation of Mitigation Measure HAZ-1 and Mitigation Measure HYD-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HAZ-1 and Mitigation Measure HYD-1 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact HAZ-3 Emit hazardous emissions or handle hazardous or acutely-hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact Analysis

There are no schools within one-quarter mile of the project site that would be exposed to hazardous materials associated with the proposed project. The nearest school is the Browns Valley Elementary School in the Vacaville Unified School District, located approximately 3 miles southwest of the project site. Construction of the proposed project would involve the temporary use of hazardous materials including fuels, lubricants, solvents, paints, finishing materials, pesticides, and fertilizers. The temporary use of these materials would be confined to construction areas and on the adjacent roadways and ROW. Once the proposed project is constructed, hazardous materials would be limited to those associated with a warehouse distribution facility. The use of these materials during project construction and operation activities would be in accordance with applicable federal, State, and local regulations. Furthermore, the specific use that would occupy the proposed warehouse buildings would comply with the allowable uses of the Interchange Business Park Policy Plan. The proposed project would therefore not expose an existing or proposed school to hazardous materials, and the impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-4 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?

Impact Analysis

According to the Phase I assessment results, the project site was primarily undeveloped land until the SaveMart Distribution Center was constructed in the southeast portion of the project site in 1977. Light agricultural use may have occurred on the project site; however, the Phase I assessment observed no evidence of orchards or significant agricultural use. Therefore, the

historical use of the project site was determined to be undeveloped land and light agricultural use and does not present an environmental concern or a recognized environmental condition.

The Phase I assessment identified several LUST cases near the project site. Leaks were detected at the former SaveMart Distribution Center (700 Crocker Drive) and the Mariani Packing Company (500 Crocker Drive). The LUST case located at 700 Crocker Drive was closed in June 1998 (SWRCB 2015a). Eight underground storage tanks (USTs) were removed from the vicinity of the SaveMart Distribution Center, four from southwest of the former Save Mart warehouse building and four from east of the building. Soil excavation and remediation of the property were performed from 1989 to 1998. As part of this process, the USTs were removed, and polluted soil was over-excavated. Polluted soil was either treated on-site and used as backfill or disposed of off-site. Soil and groundwater monitoring was performed from the time of the tank removal until 1997. A subsequent investigation of deeper groundwater at the property indicated that diesel impacts to groundwater were limited and were decreasing with depth. A remedial action completion certification was issued by the Solano County Department of Environmental Management on June 17, 1998. As such, the property was remediated to the satisfaction of the regulatory agency and does not constitute a recognized environmental concern (Stantec 2017).

The LUST case located at 500 Crocker Drive south of the project site was closed in 1992 (SWRCB 2015b). A total of three USTs was removed in 1987 and 1988. After the site remediation, Solano County Department of Environmental Management issued the 1992 Case Closure Certification concluding, "no further investigation, removal action, or monitoring was required". Based on the isolated nature and extent of the documented releases, distance from the project site, and the groundwater gradient, this property does not constitute a recognized environmental concern.

The third LUST case was located at the Oates Country Store located at 4819 Midway Road north of the project site. This site was remediated, and the case was closed November 7, 1997 (SWRCB 2015c). Based on the current regulatory status of this property, this is not considered a recognized environmental concern.

All LUST cases in proximity to the project site are listed as closed. Therefore, there would be no significant hazard to the public or the environment, and the impact would be less than significant.

Level of Significance before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-5 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?

Impact Analysis

The proposed project is located about 2 miles north of the Nut Tree Airport and does not lie within its influence area. The proposed project is located about 9 miles north of Travis Air Force Base and does not lie within its influence area. The proposed project would be consistent with the performance standards of Chapter 14.09.127.060, Airport Compatibility, in the City's Municipal Code and the intent of the Interchange Business Park Policy Plan. As such, the proposed project would not result in a safety hazard related to public airports for people residing or working at the project site. No impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HAZ-6 For a project located within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Impact Analysis

The proposed project is not located within the immediate vicinity of a private airstrip. The proposed project is located about 3 miles north of the Vaca Valley Hospital Heliport and about 2 miles northwest of the Kaiser Vacaville Heliport. The proposed project would be consistent with the performance standards of Chapter 14.09.127.060, Airport Compatibility, of the City's Municipal Code and the intent of the Interchange Business Park Policy Plan. As such, the proposed project would not result in a safety hazard related to private airstrips for people residing or working at the project site, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HAZ-7 Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact Analysis

Vacaville Fire Department (VFD) Station 73, located about 1 mile southwest of the project site, is the nearest fire station to the site. The proposed project would construct three driveways along Midway Road to provide access to the project site and would widen the eastbound lane of Midway Road by 9.5 feet. Construction activities at the project site may temporarily reduce Midway Road to a one-lane road. The proposed project would implement a traffic control plan. The plan would identify all detours, appropriate traffic controls, and provide emergency access during project construction. Therefore, the proposed project would have a less than significant impact to emergency service plans.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HAZ-8 Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

Impact Analysis

There are no wildlands within the city. The north and east portions of the project site are in a moderate fire hazard severity zone (City of Vacaville 2015a). The proposed project would comply with the California Fire Code and include site-specific design features such as installing 22 fire hydrants to serve the project, five of which would be served by the City's proposed 12-inch water main on Midway Road, connecting to the City's 12-inch fire water main system, ensuring adequate emergency access to the project site, and requiring structures to be built with approved building materials. Conformance with the California Fire Code would lessen risks associated with fire hazards. During construction, the Contractor would implement Mitigation Measure HAZ-2 and prepare a Fire Management Plan to reduce the risk of significant loss, injury, or death from wildland fires. The proposed project would have a less than significant impact with implementation of Mitigation Measure HAZ-2.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM HAZ-2: Fire Management Plan. The following measures shall be implemented to reduce the risk of a wildfire at the project site during construction activities:

- Clear easily ignitable grassland vegetation from the work corridor, project site, and staging areas.
- Perform a fire watch during the construction phase to ensure early warning and fire suppression.
- All combustion engines in the project area would be equipped with spark arresters.
- Carry on-site fire suppression tools including water, shovels, and fire extinguishers.
- Notify City Fire Department of construction activities prior to performing work.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.9 HYDROLOGY AND WATER QUALITY

	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?	☐	☒	☐	☐
b)	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☒	☐
c)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☒	☐	☐
d)	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
e)	Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☒	☐	☐
f)	Otherwise substantially degrade water quality?	☐	☒	☐	☐

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
g)	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☒
h)	Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☒
i)	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☒
j)	Inundation of seiche, tsunami, or mudflow?	☐	☒	☐	☐

3.9.1 Environmental Setting

Climate and Precipitation

The City's climatic conditions are consistent with the temperate conditions that dominate the Sacramento Valley. The summers are hot and dry, and the winters are cool and moist. Average monthly temperatures range from 40 to 50 degrees during the winter months and 60 to100 degrees during the summer months. The predominant rainfall season is from November through April, with the heaviest storms occurring from December through February. Spatial rainfall distribution over the Vacaville area consists of higher intensities and volumes in the upper elevations of the western portion of the Ulatis Creek watershed and lower intensities and volumes to the east. Mean annual precipitation varies from 45 inches at the ridgeline of the Vaca Mountains to 23 inches in the flat southeastern portion of the watershed near Elmira (City of Vacaville 2013).

Watershed and Regional Drainage

A watershed is the geographic area draining into a river system, ocean, or other body of water through a single outlet and includes the receiving waters. The city contains four sub-watershed areas, the Alamo Creek, Ulatis Creek, Horse Creek, and Gibson Canyon Creek watersheds, all of which are part of the larger, 150-square-mile Ulatis Creek watershed. In general, the creeks flow in an east-southeasterly direction and ultimately drain into the Sacramento River via Cache Slough. The project site is in the Gibson Canyon Creek sub-watershed (Caltrans 2018).

Groundwater

The city primarily overlies the northwest portion of the Solano Subbasin of the Sacramento Valley Groundwater Basin. A small area in the southern portion of the city overlies the Suisun-Fairfield Valley Basin in the San Francisco Bay Hydrologic Region, but the City does not own or operate any wells within the area. The western portion of the city is in the Sacramento River Hydrologic Study Area but does not overlie any area currently designated by California Department of Water Resources as a groundwater basin or subbasin. All the City's existing and proposed municipal wells are located exclusively in the Solano Subbasin (City of Vacaville 2016).

The City's water supply consists of two surface water sources and 11 active wells, 10 of which withdraw water from the deep aquifer in the basal zone of the Tehama Formation located in the Solano Subbasin of the Sacramento Valley Basin of the Sacramento River Hydrologic Region. One operating well extracts water from a different formation, the Markley Formation, west of the English Hills fault. (City of Vacaville 2016)

Currently, approximately 5,500 acre-feet of groundwater is withdrawn per year. Lake Berryessa surface water, conveyed through the Putah South Canal, provided 26 percent of the city's total consumption of water in 2017. Sacramento Delta surface water from the North Bay Aqueduct provided an additional 42 percent of the City's water needs. Groundwater from the 11 deep wells made up the remaining 32 percent.

As documented in the Geotechnical Exploration Report, prepared by KC Engineering Company, groundwater was not encountered within the upper 25 feet of the project site (KC Engineering Company 2017).

On-site Drainage

The project site is in the City's Interchange Business Park Policy Plan area. The proposed project would be served with drainage service by the City. Stormwater at the project site would outfall into Gibson Canyon Creek, located between the north and south portions of the project site. The proposed project would install a 12- to 24-inch-diameter storm drain to serve Building 1, Building 2a, and Building 2b. The proposed project would install approximately 215,000± square feet of pervious surface at the project site, including, but not limited to, landscape planters and bioswales along the south, west, and east boundaries of the project site. The proposed project would also install 53,000± square feet of bioswales along the north and south sides of Gibson Canyon Creek. Stormwater would be directed to and treated at landscaped areas and within the bioswales before outfalling into Gibson Canyon Creek.

Water Quality

Under Section 303(d) of the 1972 Clean Water Act, States, territories, and authorized tribes are required to develop a list of waters that do not meet water quality standards, even after point sources of pollution have installed the minimum required levels of pollution control technology. The law requires that these jurisdictions establish priority rankings for water on the lists and develop action plans, called Total Maximum Daily Loads, to improve water quality. According to

the Caltrans Water Quality Planning Tool, Gibson Canyon Creek is not listed under Clean Water Act Section 303(d) (Caltrans 2018).

Flooding

Flood hazard zones are identified on official Flood Insurance Rate Maps (FIRM) issued by the Federal Emergency Management Agency (FEMA). The project site is designated as Zone X according to FIRM #06095C0162F. Zone X is defined as areas outside of the 100-year floodplain zone and have a 0.2 percent probability of flooding in a given year (FEMA 2012).

According to the General Plan, the northeastern portion of the City is subject to potential dam inundation by the Monticello Dam. The Monticello Dam formed Lake Berryessa, which stores over 1.6 million acre-feet of water when full. The project site is located 1.6 miles west of the potential Monticello Dam inundation area.

The project site and the City are more than 10 miles away from Suisun Bay, the nearest large body of water. There no major landlocked bodies of water within the City or nearby.

3.9.2 Methodology

The evaluation of potential hydrologic and water quality impacts was based on a review of City documents including the General Plan, General Plan EIR, and 2015 Urban Water Management Plan (UWMP). Mapping tools provided by FEMA and Caltrans were also reviewed. The information obtained from these sources are summarized to establish existing conditions and to identify potential environmental effects. In determining the level of significance, the analysis assumes that the proposed project would comply with relevant federal, State, and local ordinances and regulations.

3.9.3 Environmental Impact Analysis

This section discusses potential impacts related to hydrology and water quality associated with the proposed project and provides mitigation measures where necessary.

Impact HYD-1 Violate any water quality standards or waste discharge requirements?

Impact Analysis

Construction activities would include the demolition of structures; removal of vegetation; site work preparation; rerouting of the SID Canal; grading; and construction of structures, access roads, driveways, parking lot areas, utilities, and landscape areas on 68.90 acres. These activities have the potential to generate stormwater runoff and to discharge pollutants such as, fuel, solvents, oil, paints, and trash into the City's storm drain system. The proposed project would comply with the NPDES General Construction Permit. The NPDES General Construction Permit includes the preparation of a SWPPP and incorporation of BMPs to control sedimentation, erosion, and hazardous materials from contacting stormwater, with the intent of keeping all products of erosion from moving off-site into receiving waters. The SWPPP and applicable BMPs have been incorporated into Mitigation Measure HYD-1 to reduce potential water quality

impacts to a less than significant level. The proposed project would comply with the provisions of the City's Grading Ordinance (Chapter 14.19) and the City's Urban Stormwater Quality Management and Discharge Control regulations (Chapter 14.26). The City's Urban Stormwater Quality Management and Discharge Control regulations implement the requirements of the Central Valley Regional Water Quality Control Board Order 2013-0001-DWQ to reduce pollutants in stormwater discharges.

Operational Impacts

The proposed project would change the undeveloped lands at the project site to an industrial warehouse use. The proposed project would create 1,548,000 square feet of impervious surface at the project site. This increase in impervious surface at the project site would alter the type and level of pollutants in stormwater runoff from the project site. Stormwater runoff from building rooftops, parking lot areas, sidewalks, access roads, and landscaped areas would potentially contain oils, grease, fuels, byproducts of combustion, pesticides, fertilizers, and herbicides. To control stormwater runoff, the proposed project would include installing a 12- to 24-inch-diameter storm drain to serve the three warehouse buildings and approximately 268,000 square feet of pervious surfaces at the project site. Pervious surfaces would include landscape planters and bioswales along the southern, western, and eastern boundaries of the project site and along the north and south sides of Gibson Canyon Creek. Stormwater generated at the project site would be directed and treated in the landscaped areas and the bioswales before discharging to Gibson Canyon Creek. As such, the proposed project would comply with Chapter 14.26.030 of the City's Municipal Code and would incorporate post-construction BMPs to prevent, control, and reduce the volume of pollutants in stormwater runoff. The proposed drainage system improvements would be designed and constructed in accordance with the City's Standard Specifications, Utility Master Plans, General Plan, and Interchange Business Park Policy Plan. As such, operation of the proposed project would have a less than significant impact related to water quality degradation.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM HYD-1: Prepare and Implement a SWPPP. Prior to the issuance of any construction-related permits, the Applicant shall prepare and submit a Notice of Intent (NOI) to the State Water Resources Control Board and prepare a SWPPP in compliance with the NPDES General Construction Permit. The SWPPP shall include a detailed, site-specific listing of the potential sources of stormwater pollution; pollution prevention measures (erosion and sediment control measures and measures to control non-stormwater discharges and hazardous spills); description of the type and location of erosion and sediment control BMPs to be implemented at the project site; and a BMP monitoring and maintenance schedule to determine the amount of pollutants leaving the project site. A copy of the SWPPP must be current and remain on the project site. Water quality BMPs identified in the SWPPP could include, but are not limited to, the following:

- Surface water runoff shall be controlled by directing flowing water away from critical areas and by reducing runoff velocity. Diversion structures such as terraces, dikes, and ditches shall collect and direct runoff water around vulnerable areas to prepared drainage outlets.
- Surface roughening, berms, check dams, hay bales, or similar devices shall be used to reduce runoff velocity and erosion.
- Sediment shall be contained when conditions are too extreme for treatment by surface protection. Temporary sediment traps, filter fabric fences, inlet protectors, vegetative filters and buffers, or settling basins shall be used to detain runoff water long enough for sediment particles to settle out. Construction materials, including topsoil and chemicals, shall be stored, covered, and isolated to prevent runoff losses and contamination of groundwater.
- Topsoil removed during construction shall be carefully stored and treated as an important resource. Berms shall be placed around topsoil stockpiles to prevent runoff during storm events.
- Fuel and vehicle maintenance areas shall be established away from all drainage courses and these areas shall be designed to control runoff.
- Temporary erosion control measures (such as silt fences, staked straw bales, and temporary revegetation) shall be employed for disturbed areas. No disturbed surfaces will be left without erosion control measures in place during the winter and spring months.
- A spill prevention and countermeasure plan shall be developed to identify proper storage, collection, and disposal measures for potential pollutants (such as fuel, fertilizers, pesticides, etc.) used on-site. The plan would also require the proper storage, handling, use, and disposal of petroleum products.
- Construction activities shall be scheduled to reduce land disturbance during peak runoff periods and to the immediate area required for construction. Soil conservation practices shall be completed during the fall or late winter to reduce erosion during spring runoff. Existing vegetation will be retained where possible. To the extent feasible, grading activities shall be limited to the immediate area required for construction.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact HYD-2 Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there should be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Impact Analysis

The proposed project would not use groundwater supplies for construction or operation. According to the geotechnical exploration report, groundwater was not encountered within the upper 25 feet of the project site during subsurface investigations (KC Engineering Company 2017). However, the proposed project would create 1,548,000 square feet of impervious surface at the project site. The construction of new impermeable surfaces would potentially impact groundwater if areas currently available for the infiltration of rainfall are replaced or reduced. The proposed project would incorporate 268,000 square feet of pervious surface at the project site, consisting of landscape planters and bioswales along the southern, western, and eastern boundaries of the project site and along the north and south sides of Gibson Canyon Creek. The landscape areas and bioswales would detain and treat water prior to discharging to Gibson Canyon Creek. Therefore, the proposed project would not substantially interfere with local groundwater recharge. The drainage system improvements would be designed and constructed in accordance with the City's Standard Specifications, Utility Master Plans, General Plan, and Interchange Business Park Policy Plan. Impacts related to groundwater recharge would therefore be less than significant.

Level of Significance before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance after Mitigation

Less Than Significant Impact.

Impact HYD-3 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?

Impact Analysis

Construction of the proposed project would include ground-disturbing work within and adjacent to Gibson Canyon Creek and the SID Canal. As part of the proposed project, twin box culverts would be installed in Gibson Canyon Creek and 2,025 feet of the SID Canal would be

undergrounded via a 48-inch-diameter pipe. Construction activities in these drainages could cause erosion or siltation.

As determined by the USACE, the proposed project would be subject to Clean Water Act Section 401 water quality certification and a Section 404 permit. The proposed project would also obtain a CDFW Streambed Alteration Agreement. Prior to in-channel construction activities, the Applicant would complete the Section 404 Clean Water Act Nationwide Permitting Process and the Regional Water Quality Control Board Section 401 certification and obtain a Streambed Alteration Agreement from CDFW. The twin box culverts would be 6 feet high by 10 feet wide and would be located within the stream channel to support the two roadways. If water is present in Gibson Canyon Creek during construction, a dewatering system, consisting of pumping water from the upstream side of the proposed culvert to the downstream side to temporarily provide a dry construction area inside the creek, would be installed to convey surface water through the project site to ensure surface water flows do not cause erosion through the construction area, or in the creek channel. Geotechnical design recommendations (Mitigation Measure GEO-1) would reduce potential shoring impacts to less than significant. Additionally, the proposed project would implement Mitigation Measure HYD-1, including preparing a SWPPP in accordance with the NPDES General Construction Permit. The SWPPP would include BMPs, which would be implemented during construction activities to reduce the potential of erosion. Implementation of regulatory permit requirements and Mitigation Measure HYD-1 would reduce construction-related water quality impacts to a les than significant level. Therefore, erosion impacts during construction activities in Gibson Canyon Creek would be less than significant with implementation of Mitigation Measures GEO-1 and HYD-1.

The SID Canal would be piped via a 48-inch-diamter pipe buried approximately 10 feet below ground within a new 25-foot ROW. The USACE has determined that the SID Canal is a non-jurisdictional feature. This portion of the SID Canal would be temporarily shut down to allow for the pipeline installation and to complete the pipeline connections to the existing SID Canal pipelines at the west and east ends of the project site. Construction of the open portion of the SID Canal channel would be timed to occur during the wet months when the SID canal is not in use. The open portion of the SID Canal would be filled with 3,000 cubic yards of imported fill. The imported fill would be compacted to 90 percent relative compaction for construction. The proposed project would implement Mitigation Measure HYD-1 and incorporate BMPs during construction activities to reduce potential erosion impacts near the SID Canal channel to a less than significant level.

Operation of the proposed project would alter drainage patterns with the construction of 1,548,000 square feet of impervious surface at the project site. The proposed project would install approximately 268,000 square feet of pervious surface at the project site consisting of landscape planters and bioswales along the southern, western, and eastern boundaries of the project site and along the north and south sides of Gibson Canyon Creek. These areas would provide treatment, retention, and/or detention at the project site to reduce the volume of stormwater runoff and erosion impacts. The proposed storm drainage improvements would be designed and constructed in accordance with the City's Storm Drain Standard Specifications. Therefore, erosion and siltation impacts associated with operation of the proposed project would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measures GEO-1 and HYD-1 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact HYD-4 Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Impact Analysis

Gibson Canyon Creek extends east to west in the central portion of the project site. The proposed project would install twin box culverts approximately 6 feet high by 10 feet wide within the creek channel to support the two roadways. The twin box culverts would be designed and constructed in accordance with the City's standard specifications to maintain peak flow rates in Gibson Canyon Creek. The proposed project would construct 53,000 square feet of bioswales on the north and south sides of the creek channel and incorporate landscape planters and bioswales along the southern, western, and eastern boundaries of the project site. Stormwater at the project site would be diverted to the landscaped areas and bioswales, which would control the volume of stormwater at the project site to reduce the potential for flooding. The landscaped areas and bioswales would treat stormwater runoff before it is discharged to Gibson Canyon Creek. Stormwater improvements incorporated as part of the proposed project would be designed in accordance with the City's Storm Drain Standard Specifications. Therefore, the proposed project would not result in on- or off-site flooding, and the impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact HYD-5 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?

Impact Analysis

During construction activities, the proposed project would conform to the requirements of the NPDES General Construction Permit, which involves the preparation and implementation of a SWPPP. The SWPPP would specify BMPs to incorporate during construction to prevent, control, and reduce polluted runoff from entering the City's storm drain system and waterways (e.g., Gibson Canyon Creek). Implementation of these BMPs would be part of Mitigation Measure HYD-1. Stormwater runoff from construction activities is not anticipated to generate a substantial amount of polluted runoff, and the impacts would be less than significant with mitigation incorporated.

As required by Chapter 14.26.010 of the City's Municipal Code, urban stormwater quality management and discharge control requirements would be implemented as part of the proposed project. The proposed project would construct landscape planters and bioswales along the southern, western, and eastern boundaries of the project site and along the north and south sides of Gibson Canyon Creek. These BMPs would be implemented to reduce the amount of stormwater entering the City's storm drain system. Furthermore, implementation of these BMPs would prevent and minimize the potential for sediment, debris, and other pollutants to enter the City's storm drain system. Stormwater improvements incorporated as part of the proposed project would be designed in accordance with City's Storm Drain Standard Specifications. Therefore, the proposed project would not generate stormwater runoff that would exceed the capacity of existing or planned stormwater drainage systems or generate a substantial amount of polluted runoff. The impacts would be less than significant with Mitigation Measure HYD-1 incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact HYD-6 Otherwise substantially degrade water quality?

Impact Analysis

Implementation of BMPs during construction would be in accordance with the provisions of the SWPPP, as identified in Mitigation Measure HYD-1. The BMPs identified in the SWPPP would be in accordance with the NPDES General Construction Permit and would minimize the release of sediment, soil, and other pollutants. As described above, the proposed project would comply with Chapter 14.26.010 of the City's Municipal Code and incorporate BMPs during operation of the proposed project to prevent, control, and reduce stormwater runoff resulting from the increase in impervious surfaces at the project site. Construction of the landscaped areas and bioswales would control the volume and rate of stormwater runoff and would treat stormwater before it enters the City's storm drain system and Gibson Canyon Creek. As such, construction of these facilities and the incorporation of Mitigation Measure HYD-1 would minimize the generation, transport, and discharge of pollutants, and impacts to water quality would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure HYD-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact HYD-7 Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

Impact Analysis

The project site is not within a 100-year floodplain zone and does not involve the construction of housing (City of Vacaville 2015a; FEMA 2012). No flood-related impacts to housing would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HYD-8 Place within a 100-year flood hazard area structures which would impede or redirect flood flows?

Impact Analysis

The project site is not within a 100-year floodplain zone (City of Vacaville 2015a; FEMA 2012). No impacts associated with placing structures within a 100-year flood hazard area would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact HYD-9 Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Impact Analysis

The nearest dam to the project site is the Monticello Dam in Napa County, located over 10 miles northwest of the project site. The project site is not located within the Monticello Dam inundation zone and or within a 100-year floodplain zone (City of Vacaville 2015a). No impacts associated with flooding would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation necessary.

Level of Significance After Mitigation

No Impact.

Impact HYD-10 Inundation of seiche, tsunami, or mudflow?

Impact Analysis

The project site would not be susceptible to seiche, tsunami, or mudflow. Seiches affect locations adjacent to larger water bodies such as lakes or reservoirs; the project site is not located near any such water body. The project site is located more than 45 miles from the Pacific Ocean and more than 10 miles from Suisun Bay, substantially reducing the potential for impacts from tsunamis. The project site and the surrounding area are relatively flat. However, during the geotechnical exploration, an erosion scar was located along the southern bank of the SID Canal in the northeastern portion of the project site (KC Engineering Company 2017). This area may be subject to additional movement, resulting in a potential landslide impact. The geotechnical exploration report recommends the placement of rip-rap in this area, which has been incorporated into Mitigation Measure GEO-1. Therefore, the impacts would be less than significant with implementation of Mitigation Measure GEO-1.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure GEO-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

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3.10 LAND USE AND PLANNING

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Physically divide an established community?	☐	☐	☐	☒
b)	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c)	Conflict with any applicable habitat conservation plan or natural communities' conservation plan?	☐	☒	☐	☐

3.10.1 Environmental Setting

The proposed project is in northwest Vacaville, west of I-505 in the City's Interchange Business Park Policy Plan area. The proposed project would be located on APN 106-240-340 and APN 106-240-350, south of Midway Road and north of the former SaveMart Distribution Center. The General Plan designates the northern portion of the project site (generally north of Gibson Canyon Creek) Commercial Office and the southern portion (generally south of Gibson Canyon Creek) Industrial Park. Land surrounding the project site consists of a mix of uses including industrial, commercial, and warehouse distribution facilities to the south; residential and commercial uses to the north and west; and I-505, a major transportation corridor, to the east.

3.10.2 Methodology

The evaluation of potential land use impacts was based on a review of applicable land use documents, including the City's General Plan, the City's Interchange Business Policy Plan, and the City's Municipal Code. A General Plan policy consistency analysis was completed for the proposed project. This analysis examined the consistency of the proposed project with applicable General Plan policies.

3.10.3 Environmental Impact Analysis

This section discusses potential impacts related to land use and planning associated with the proposed project and provides mitigation measures where necessary.

Impact LU-1 Physically divide an established community?

Impact Analysis

Development of the proposed project would occur within the Industrial Business Park Policy Plan area. It would not create any new roadways that would divide existing or proposed communities in its vicinity.

Gibson Canyon Creek divides the project site into two portions. Two internal roadways are proposed across the creek to provide access to the southern portion of the warehouse facility. Midway Road would be widened within the City's ROW. The new ROW for the SID Canal would be located north of Building 2a and 2b, closer to the project site boundary than the existing canal to facilitate site development. Parcel B would be subdivided into three separate parcels. However, all the proposed project-related activities would occur at the project site and would not physically divide any established communities. Therefore, no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact LU-2 Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the Project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Impact Analysis

General Plan and Zoning Consistency

The project site is within Area II and Area III of the City's Interchange Business Park Policy Plan area. This area is designated for the location of large-scale manufacturing, research, wholesale, and storage uses. The General Plan land use designation for the project site is Commercial Office and Industrial Park. The project site is in the Industrial Park Zoning District, which is intended to provide for large industrial and warehouse uses along with some supporting commercial uses. The proposed project would therefore comply with the permitted uses under the City's General Plan and Zoning Ordinance. An evaluation of the proposed project's consistency with the City's General Plan goals and policies is provided in Appendix J, Table 3.10-1, General Plan Consistency Analysis. Consistency with the City's ECAS measures is provided in in Table 3.7-3 in Section 3.7, Greenhouse Gases.

As discussed in the table below, the proposed project would be consistent with the General Plan's goals and policies.

Interchange Business Park Policy Plan and Site Development Standards

The proposed project would be built in accordance with the development standards and policies contained in the Interchange Business Park Policy Plan. Table 3.10-2 below discusses the proposed project's consistency with the development standards for both Area II and Area III. As shown in the table, the proposed project would meet or exceed most of the required setbacks, height limits, and FAR. Additionally, Buildings 2a and 2b, would be constructed at a height of up to 36 feet, as the proposed building lies within 250 feet of Midway Road. The Interchange Business Park Policy Plan allows for a height of 36 feet within 250 feet of Crocker Drive and Midway Road in Area II. The project site does not lie within an airport influence zone, and the maximum height of Buildings 2a and 2b would not exceed 36 feet. No significant impacts would occur to adjacent land uses. The proposed project would be consistent with the development standards established by the Interchange Business Park Policy Plan. In addition, the proposed project would be subject to a Design Review approval.

Table 3.10-2: Interchange Business Park Policy Plan Development Standards Consistency Analysis

Project Features	Proposed Development Standards	Required Development Standards	Consistent
Building 1 (Area III)			
Height	36 feet – 40 feet	70 feet	Yes
Site area	1,851,300 square feet	50,000 square feet	Yes
Floor Area Ratio	0.33	0.4	Yes
Front Setbacks	N/A	Buildings – 40 feet Parking - 30 feet	Yes
Rear setbacks	≥ 40 feet	40 feet *Minimum building setbacks shall be increased 1 foot for each 3 feet above 20 feet of building height*	Yes
Side setbacks	≥ 40 feet	Buildings – 40 feet Parking - 30 feet	Yes
Building 2a and Building 2b (Area II)			
Building 2a Height	28 feet – 36 feet	70 feet, but 36 feet within 250 feet of Crocker Drive and Midway Road	Yes
Building 2b Height (within 250 feet of Midway Road)	36 feet		Yes
Site area	126,936 square feet	50,000 square feet	Yes

Project Features	Proposed Development Standards	Required Development Standards	Consistent
Floor Area Ratio	0.34	0.4	Yes
Front Setbacks	≥ 40 feet	Buildings – 40 feet Parking - 30 feet	Yes
Adjoining setbacks (abutting other parcels)	≥ 40 feet	40 feet *Minimum building setbacks shall be increased 1 foot for each 3 feet above 20 feet of building height*	Yes
Rear setbacks (abutting freeway ramp)	≥ 10 feet	10 feet	Yes

Table 3.10-3 discusses the proposed project's consistency with the goals and policies of the Interchange Business Park Policy Plan. As shown in the table, the proposed project would be consistent with the goals and policies contained in the Interchange Business Park Policy Plan.

Table 3.10-3: Interchange Business Park Policy Plan Consistency Analysis

Plan Goals and Policies	Consistency Determination
1. The Interchange Business Park shall be designed as an integral part of the City of Vacaville. The area shall be designed to enhance the health, welfare, economic well-being and environmental quality of the City.	**Consistent.** The proposed project is intended to provide a high-quality, well-planned warehouse development with adequate landscape buffer to shield the residential uses to the north and be compatible with the surrounding uses. The proposed project would create jobs for the local population and help maintain the job/housing balance in the City.
2. Industrial uses shall be compatible with the residential and public uses allowed in the area and its surroundings, to the extent possible while recognizing the overall industrial nature of the business park. Compatibility shall be promoted through the appropriate use of site, site location, site planning and design.	**Consistent.** The proposed project would include landscaping along the frontage of Midway Road to shield the residential uses to the north.
3. Development shall provide for necessary public facilities and services.	**Consistent.** The proposed project would connect to the existing utilities. As discussed in Section 2.0, Project Description, some utility improvements are underway for the Interchange Business Park Policy Plan area to provide adequate capacities to serve the proposed project.
4. Development of the site shall be consistent with the City's General Plan, applicable City land use policies and standards, special required studies and other applicable planning documents. For example, development plans shall demonstrate compliance with any required noise and traffic studies, environmental review, and Airport Land Use Compatibility Plans.	**Consistent.** Technical reports were prepared for air quality, biological resources, cultural resources, geology, noise, and traffic. This Draft ISMND requires mitigation where required and is consistent with the applicable planning documents related to protecting special-status species.

Plan Goals and Policies	Consistency Determination
5. Site planning, building design and construction, shall consider all feasible energy conservation techniques and utilize life cycle costing which considers initial costs, as well as long-term operational costs. Landscaping shall be provided in accordance with the City's Water Efficient Landscape Regulations.	**Consistent.** Landscaping for the proposed project would be provided in accordance with the City's Water Efficient Landscape Regulations.
6. The use of mass transit, carpooling, bicycling, and other options to reduce auto dependency should be encouraged through appropriate design.	**Consistent.** The project site is not served by any transit services. However, the proposed project design would include a bicycle rack near each building entrance on the north and south sides of the buildings. The proposed project would therefore be consistent with this policy.
7. Buildings, site development and on-site utilities for sewer, water, drainage, electrical and natural gas shall be designed and constructed in accordance with the Utility Master Plan, Uniform Building Code, adopted Fire Code and other adopted uniform codes as amended by the Municipal Code.	**Consistent.** As discussed in this Draft ISMND, the proposed project would conform to all applicable codes for site design and utilities. In addition, the proposed project's design standards and guidelines would be subject to the City's review to ensure compliance with applicable codes and plans.
8. Special character and quality of industrial area architecture and landscape design shall be applied to areas visible from I-505 and adjacent to Vaca Valley Parkway, and Midway Road.	**Consistent.** The proposed project is intended to provide a high-quality, well-planned warehouse development that would include landscaping along Midway Road, Gibson Canyon Creek, the project entrance, and parking areas.

In summary, the proposed project would not conflict with the City's General Plan, zoning ordinance, and Interchange Business Park Policy Plan. The impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact LU-3 Conflict with any applicable habitat conservation plan or natural communities conservation plan?

Impact Analysis

As discussed in Section 3.4, Biological Resources, the City falls within the jurisdiction of the Solano Multispecies HCP, which was released in administrative draft form in 2012. It is not within the area of any adopted HCPs. The draft HCP encompasses the cities of Vacaville, Fairfield, Suisun City, Vallejo, Dixon, and Rio Vista (SCWA 2012). The SCWA assumes overall responsibility for coordination, reporting, and oversight of the Conservation Program. The draft HCP boundaries encompass the entire project site. The draft HCP mapped the project site as within the Valley Floor Grassland and Vernal Pool natural community but also within the developed vegetation and land cover type. The HCP also includes the project site in the General Plan Designated Planned Development area. (SCWA 2012). The mitigation measures identified in Section 3.4, Biological Resources, are in accordance with those in the draft HCP (Mitigation Measure BIO-3, Mitigation Measure BIO-4, Mitigation Measure BIO-5, Mitigation Measure BIO-7, and Mitigation Measure BIO-8). The proposed project would therefore not conflict with the provisions of the draft HCP, and the impacts would be less than significant with mitigation measures.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure BIO-3, Mitigation Measure BIO-4, Mitigation Measure BIO-5, Mitigation Measure BIO-7 and Mitigation Measure BIO-8 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

3.11 MINERAL RESOURCES

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 classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?	☐	☐	☐	☒
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?	☐	☐	☐	☒

3.11.1 Environmental Setting

According to the U.S. Geological Survey, the Vacaville Planning Area contains limited mineral resources that are being extracted. Southwest of the project site in the vicinity of Cement Hill, limestone deposits show evidence of some historic use. Stone quarries in the Vaca Mountains produced dimensioned and ornamental stone. The western hills contain sandstone and conglomerates that may be used for sands, gravel, and stone; however, none of these resources are currently being mined (City of Vacaville 2015).

3.11.2 Methodology

The following analysis is based on a review of the General Plan, General Plan EIR, Solano County General Plan, and available maps and documents published by the CDC Office of Mines Reclamation Map Viewer and the USGS Mineral Resources Online Spatial Data system. The following impact discussions consider the impacts of the proposed project related to mineral resources.

3.11.3 Environmental Impact Analysis

This section discusses potential impacts on mineral resources associated with the proposed project and provides mitigation measures where necessary.

Impact MIN-1 Result in the loss of availability of a known mineral resource classified MRZ-2 by the State Geologist that would be of value to the region and the residents of the State?

Impact Analysis

No mineral extraction activities exist on or near the project site, and mineral extraction is not included as a part of the proposed project. According to the CDC Office of Mine Reclamation Map Viewer and the General Plan, the project site does not contain any known mineral

resources (CDC 2016). Additionally, the Solano County General Plan classifies the project site as mineral resource zone (MRZ)-1, indicating no known valuable minerals or other natural resources that would be of value to the region are located on or near the project site (Solano County 2008). Therefore, the proposed project would not result in the loss of availability of a known mineral resource, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact MIN-2 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?

Impact Analysis

As described under Impact MIN-1, the project site is not identified in the City's General Plan or by the CDC as containing known significant levels of mineral resources. The lack of notification within the General Plan suggests that any potential mineral resources located within the project area are not locally important. Therefore, the proposed project would not result in the loss of availability of a locally important mineral resource recovery site, and no impact would occur.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.12 NOISE

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b)	Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?	☐	☐	☒	☐
c)	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☒	☐
d)	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☒	☐	☐
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 of public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒
f)	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

3.12.1 Environmental Setting

Characteristics of Noise

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. The zero point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Audible increases in noise levels generally refer to a change of 3 dB or

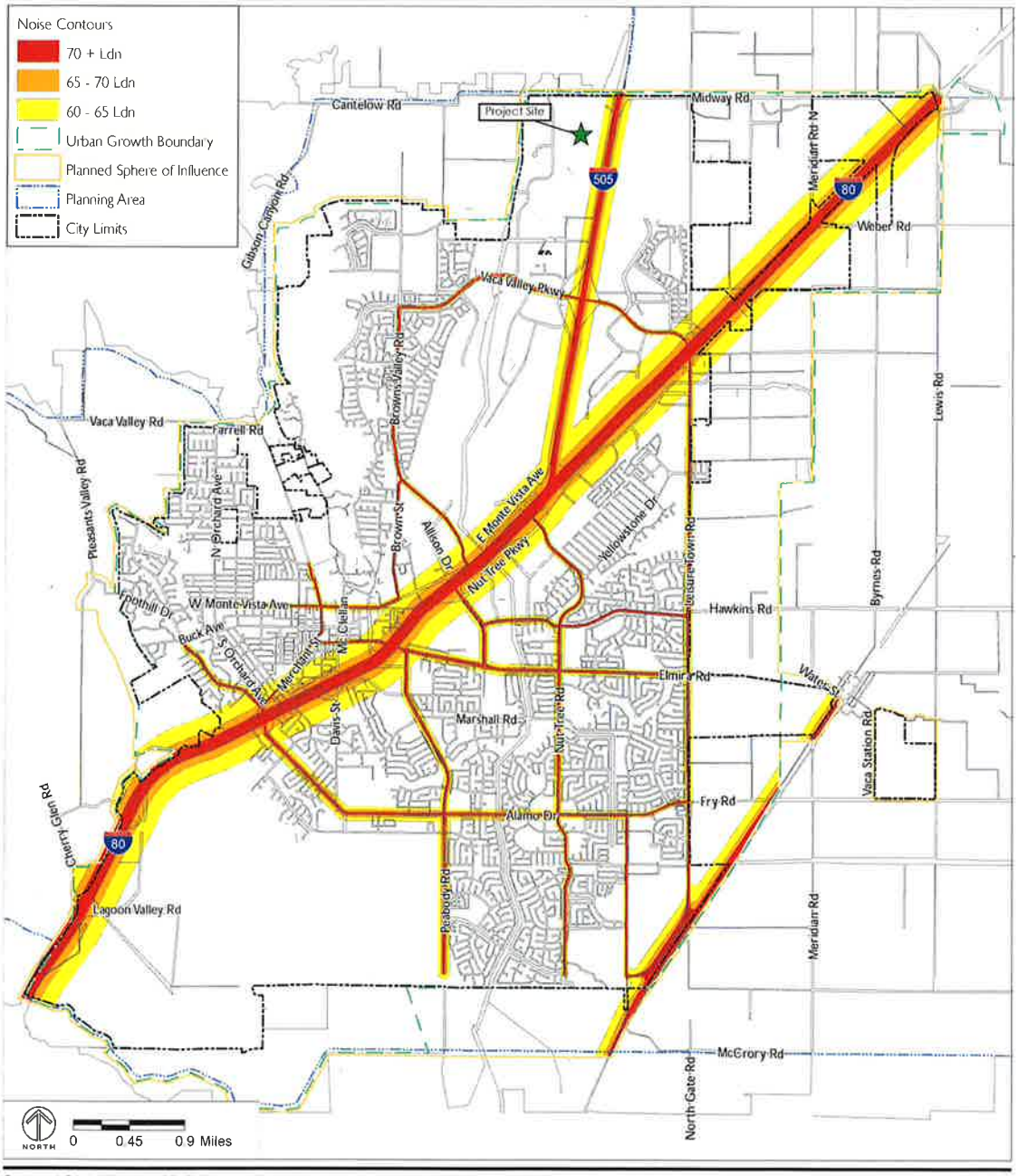
more, as this level has been found to be barely perceptible to the human ear in outdoor environments. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense, and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness.

Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for a number of sound level metrics, including the day/night sound level (Ldn) and the community noise equivalent level (CNEL), both of which represent the sensitivity of humans to sound at night. In addition, the equivalent continuous sound level (Leq) is the average sound energy of time-varying noise over a sample period, and the Lmax is the maximum instantaneous noise level occurring over a sample period.

Existing Ambient Noise Levels

The existing noise environment in a project area is characterized by the area's general level of development. Areas that are not urbanized are relatively quiet, while areas that are more urbanized are noisier as a result of roadway traffic, industrial activities, and other human activities. Given the commercial nature of the project area, ambient noise levels are expected to be in the range of 50 to 75 Ldn, as shown in Table 3.12-1 and Figure 3.12-1.

Vacaville is exposed to noise generated by traffic on Interstate-80 (I-80) and I-505. To a lesser extent, noise is also generated along major arterial roads such as Elmira Road, Vaca Valley Parkway, Alamo Drive, Peabody Road, and Browns Valley Road. Traffic noise depends primarily on traffic speed (tire noise increases with speed) and the proportion of truck traffic (trucks generate engine, exhaust, and wind noise in addition to tire noise). Changes in traffic volumes can also have an impact on overall traffic noise levels. For example, a doubling of traffic volumes results in a 3 dB increase in noise levels. Existing roadway noise contours are shown on Figure 3.12-1.



Source: LSA Associates, 2012.

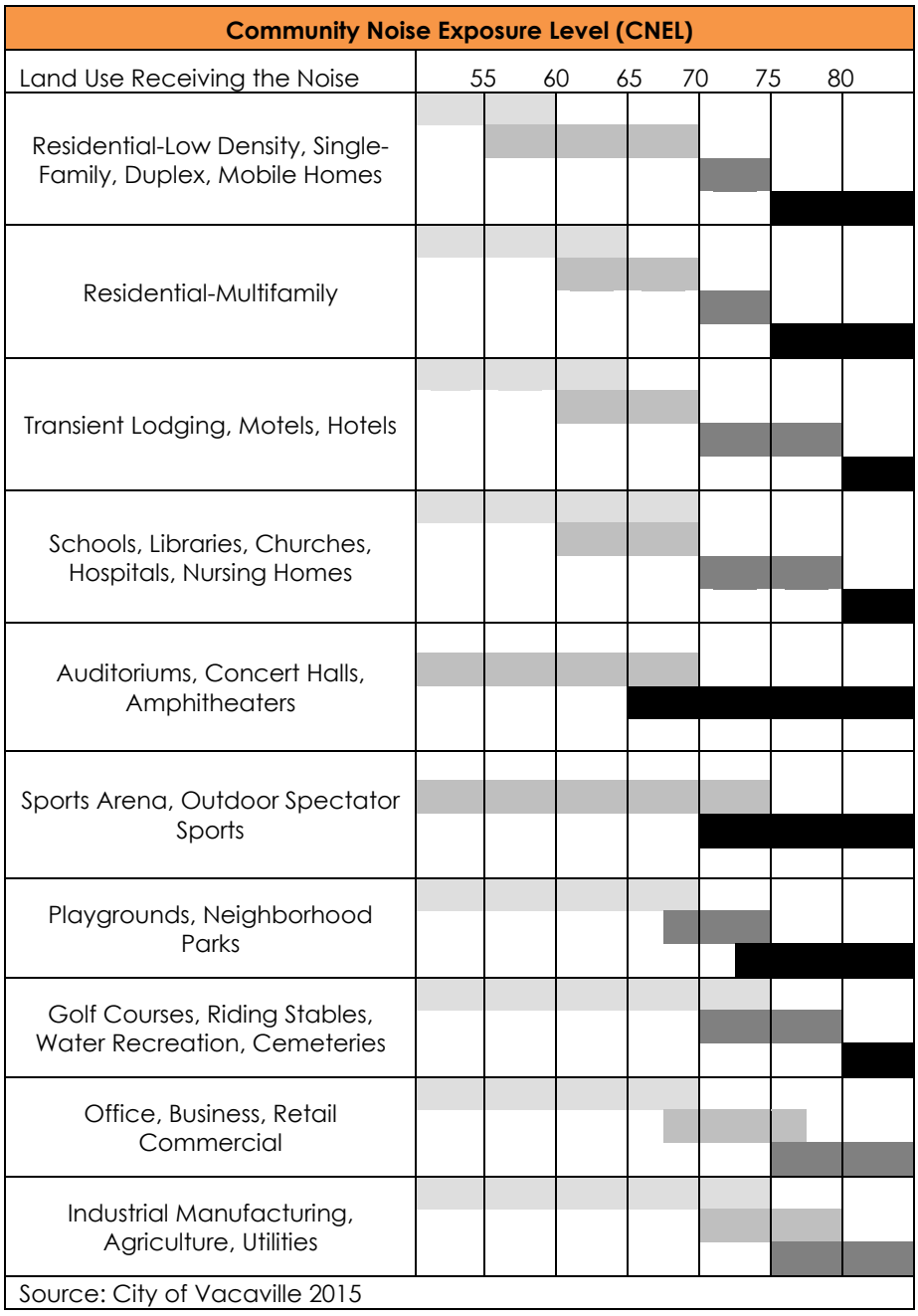
Note: This figure is not to scale
Source: City of Vacaville General Plan 2015

City of Vacaville
LDK Warehouse Project

Stantec

Figure 3.12-1: Existing Noise Contours

Table 3.12-1: Noise and Land Use Compatibility Matrix



Normally Acceptable
Specified land use is satisfactory, based on the assumption that any buildings involved are of normal 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 feature included in the design.

Normally Unacceptable
New construction of development should be discouraged. If new construction of 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 clearly should not be undertaken.

Vibration Standards

Vibration is like noise in that both involve a source, a transmission path, and a receiver. While related to noise, vibration differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. People's perception of vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system that is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels, defined in terms of peak particle velocities. The City does not have specific policies pertaining to vibration levels. However, vibration levels associated with construction activities and proposed project operations are addressed as potential noise impacts associated with the proposed project implementation.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 3.12-2 summarizes the general threshold at which human annoyance could occur is noted as 0.1 in/sec PPV. Table 3.12-3 indicates that the threshold for damage to structures ranges from 0.12 to 2.0 peak particle velocity in inches per second (in/sec PPV), depending on the structure type and condition.

Table 3.12-2: Guideline for Vibration Annoyance Threshold

Human Response	Maximum PPV (in/sec)	
	Transient Sources	Continuous/Frequent Sources
Barely perceptible	0.04	0.01
Distinctly perceptible	0.25	0.04
Strongly perceptible	0.9	0.10
Severe	2.0	0.4

Notes: Transient sources such as blasting or drop balls create a single isolated vibration event. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment.

Source: California Department of Transportation 2004.

Table 3.12-3: Guideline for Vibration Damage Threshold

Structure and Condition	Maximum PPV (in/sec)	Transient Sources Continuous/Frequent Sources
Extremely fragile historic buildings, ruins, ancient monuments	0.12	0.08
Fragile buildings	0.2	0.1
Historic and some old buildings	0.5	0.25
Older residential structure	0.5	0.3
New residential structures	1.0	0.5
Modern industrial/commercial buildings	2.0	0.5
Notes: Transient sources create a single isolated vibration event, such as blasting or drop balls. Continuous/frequent intermittent sources include impact pile drivers, pogo-stick compactors, crack-and-seat equipment, vibratory pile drivers, and vibratory compaction equipment. Source: California Department of Transportation 2004.		

Noise Regulatory Framework

The Noise Element of the City of Vacaville General Plan identifies land use compatibility noise standards for noise-sensitive land uses affected by all noise sources. As shown in Table 3.12-1, for noise sensitive land uses, including office, business, and retail commercial uses, that are affected by noise sources, the "normally acceptable" exterior noise level is 70 dBA Ldn/CNEL. Exterior noise levels of up to 77.5 dBA Ldn/CNEL for commercial land uses are considered "conditionally acceptable" provided needed noise mitigation measures have been incorporated and interior noise levels are maintained within "normally acceptable" levels. Maximum acceptable interior noise standards for commercial land uses have not been established (City of Vacaville 2015). The City has adopted policies in the General Plan to reduce exposure of unacceptable noise levels to the residents of the City. The following policies are applicable to the proposed project:

Policy NOI-P4.1. Preclude the generation of annoying or harmful noise through conditions of approval on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

Policy NOI-P4.2. Require the following construction noise control measures:

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

- Limit hours of operation of outdoor noise sources through conditions of approval.

City of Vacaville Performance Standards Chapter 14.09.127.090 Hours of Construction

A. No construction or grading equipment shall be operated, nor any outdoor construction or repair work shall be permitted within 500 feet from any occupied residence between dusk (one-half hour after sunset) and seven a.m. Monday through Saturday, and no such grading or construction activities shall be allowed on Sundays or holidays except as provided for herein:

    1. Interior work which would not create noise or disturbance noticeable to a reasonable person of normal sensitivity in the surrounding neighborhood shall not be subject to these restrictions;

    2. Construction or repair work performed by or under the direction of a homeowner at his or her residence is exempt from these restrictions on Sundays and holidays, but such construction or repair work shall be limited to the hours between eight a.m. and dusk.

B. A request for an exception to the permitted construction hours and days may be granted by the Director for emergency work, to offset project delays due to inclement weather, for 24-hour construction projects, or other similar occurrences.

C. City projects undertaken by or on behalf of the City's Public Works Department shall be exempt from these provisions.

3.12.2 Methodology

The general ambient noise conditions used for this analysis were established from the Land Use Compatibility Standards for Community Noise Environments taken from the City of Vacaville General Plan Noise Element, as shown in Table 3.12-1. Based on this table, it is anticipated that ambient noise conditions for the sensitive receptors surrounding the project site, mainly low-density residential properties north of Midway road, would be between 50 and 60 Ldn. Similarly, it is anticipated that the ambient noise levels for the proposed project site are between 50 and 75 Ldn. For the purpose of this analysis, potential sensitive receptors were determined by reviewing current aerial photography.

Estimated ambient noise levels were used as an input to the Federal Highway Administration (FHWA) Roadway Construction Noise Model (RCNM) and Traffic Noise Model (TNM). The RCNM is used as the FHWA's national standard for predicting noise generated from construction activities, while the TNM predicts noise generated from project-specific increase in traffic levels. The TNM was also used to predict the long-term operational noise conditions including indoor noise levels.

The primary method used to evaluate construction noise impacts for this analysis was the RCNM. The RCNM analysis includes the calculation of noise levels (Lmax and Leq) at incremental distances for a variety of construction equipment. The spreadsheet inputs include acoustical use factors, Lmax values, and Leq values at the nearest sensitive receptor.

The following construction equipment was used as inputs for the RCNM for all three construction phases: scrapers, water trucks, grading blades, motor graders, forklifts, skiploaders, backhoes, excavators, and loaders for site work and the construction of Building 1, Building 2a, and Building 2b.

The FHWA TNM was used to estimate construction traffic and long-term operational noise impacts for this analysis. This model was used to predict increases in traffic noise from construction activities and long-term operation of the proposed project at six sensitive receptors. Additionally, the existing roadway noise levels were assessed using the FHWA TNM to compare the construction and long-term vehicular noise levels of the proposed project to existing conditions. The FHWA model is based on reference energy mean emission levels (REMELS) for automobiles, medium trucks (two axles), and heavy trucks (three or more axles), with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

Existing and projected traffic volumes for the long-term operation of the proposed project were taken from the Vacaville LDK Transportation Impact Analysis Report prepared for the proposed project by DKS Associates. Based on this report, it is estimated that a maximum of 141 project-related vehicle trips would be generated during peak hours. Projected traffic volumes for construction activities were generated using the CalEEMod default values that were used for the air quality impact analysis in Section 3.3, Air Quality, of this ISMND. Additional information regarding the CalEEMod default values can be found in Appendix A. Based on the CalEEMod default values, it is estimated that the proposed project would generate an average of 270 worker, vendor, and hauling trips per day for the duration of project construction. Construction traffic entering and exiting the project site would travel on I-505 and Midway Road.

3.12.3 Environmental Impact Analysis

This section discusses potential impacts related to noise associated with the proposed project and provides mitigation measures where necessary.

Impact NOI-1	**Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

Impact Analysis

<u>Short-Term Construction Noise Impacts</u>

Two types of short-term noise impacts could occur during construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the project area and project site. The associated short-term noise increase along Midway Road would be perceptible; however, such a noise increase would be instantaneous and short-term. Short-term, construction-related impacts associated with worker commute and equipment transport to the project site were calculated using the FHWA TNM.

The second type of short-term noise impact is related to noise generated during construction. Construction activities would include grading, building construction, and paving. Each construction stage has its own mix of equipment and, consequently, its own noise characteristics. These various construction activities would change the character of the noise generated at the project site and, therefore, the ambient noise level as construction progresses. The loudest phases of construction include grading and paving. Throughout construction, the following types of equipment would be used, with their estimated maximum operational noise level measured at 110 feet from the operating equipment for all phases of construction.

Table 3.12-4: Summary of Federal Highway Administration Roadway Construction Noise Model

Source	Distance to Nearest Sensitive Receptor (feet)	Sound Level at Residence		
		Lmax	Acoustical Use Factor (%)	Leq
Compactor	110	76.4	20	69.4
Concrete Pump Truck	110	74.6	20	67.6
Crane	110	73.7	16	65.7
Excavator	110	73.9	40	69.9
Generator	110	73.8	50	70.8
Grader	110	78.2	40	74.2
Paver	110	70.4	50	67.4
Welder/Torch	110	67.2	40	63.2
Source: Stantec 2016; Federal Highway Administration 2006				

A reasonable worst-case noise condition for general construction activity is that all construction equipment would operate simultaneously. This represents a conservative scenario, as it assumes that all equipment would be operating at the same time and same place. Construction would, however, occur in sequential phases. Thus, it is unlikely that all of the equipment would be operating simultaneously at the exact location of the project site closest to the nearest residence. Nevertheless, the RCNM calculated that this scenario would result in a combined noise level of 78.2 dBA-Lmax and 78.7 dBA-Leq at 110 feet for construction activities. Therefore, the proposed project would result in a noise condition that exceeds the City's threshold, resulting in a potentially significant impact.

Mitigation Measure NOI-1 would be implemented to reduce construction noise in the proximity of sensitive receptors. It would include the construction of temporary barriers where construction

noise levels have the potential to exceed the maximum exterior residential noise standard. Specifically, temporary movable construction barriers would be placed on-site between construction activity-generating noise and sensitive receptors along Midway Road. Although noise levels could range into the clearly unacceptable range for low-density residential, as defined in Table 3.12-1, increases in noise levels from construction activities would be temporary and construction activities would be limited to between 7:00 a.m. and dusk, Monday through Saturday, in accordance with the City's Municipal Code.

In conclusion, construction noise would be short-term and intermittent. Furthermore, implementation of Mitigation Measure NOI-1(including construction BMPs and restrictions on permissible hours of construction) would ensure compliance with the City's construction noise standards; therefore, the impacts would be less than significant with mitigation incorporated.

Long-Term Operational Noise Impacts

Long-term operational noise impacts at the project site would occur during loading and unloading activities. Noise would be generated by the trucks' engines, exhaust systems, and brakes during low-speed gear shifting; braking activities; backing up toward the docks; dropping down the dock ramps; and maneuvering away from the docks. Building 2a and Building 2b are closest to the sensitive receptors located north of Midway Road. Building 2a would be one-story and include 10 dock-high doors, 1 knock-out door, and 1 grade-level door. Based on the orientation of the building, the nearest sensitive receptor is approximately 540 feet from the dock-high doors, and the building itself would provide a barrier between this sensitive receptor and the loading zone. Building 2b would be one-story and include 10 dock-high doors, 1 knock-out door, and 1 grade-level door. The building entrances would be located on the south side of the building at the west and east ends, and the loading docks would be located on the south side of the building, thereby fully blocking the residences located north of Midway Road. Building 1, which would be one-story and include 122 dock-high doors, 20 knock-out doors, and 4 grade-level doors on the north and south sides of the building will be the largest of the buildings and would be located the furthest from any potential sensitive receptors. Due to the orientation of the site and the distance to sensitive receptors, the impacts would be less than significant.

In addition, long-term operation of the project would generate an increase in traffic volumes on the local roadways in the project vicinity, mainly along Midway Road. As shown in Table 3.12-5, potential noise impacts were assessed by comparing estimated increases in noise levels to ambient noise conditions. Existing traffic noise exposure levels indicate that sensitive receptors within and near the project area are currently exposed to noise levels ranging from 60.4 dBA to 63.8 dBA.

Table 3.12-5: Long Term Impacts (Hourly Equivalent)

Receptor	Existing Noise Level (dBA)	Operational Noise Level (dBA)
1 (East of I-505)	62.7	63.8
2 (East of I-505)	61.7	62.8

Receptor	Existing Noise Level (dBA)	Operational Noise Level (dBA)
3 (North of Midway Road)	55.7	57.6
4 (North of Midway Road)	60.4	62.3
5 (North of Midway Road)	57.0	58.9
6 (North of Midway Road)	63.8	65.6
Source: Federal Highway Administration TNM (Stantec, 2015)		

Estimated noise levels resulting from the development of the proposed project would change slightly from existing conditions. Traffic noise would increase at a maximum of 1.9 dBA at receptors 3, 4, and 5; this increase in noise level is less than 3 dBA, which has been found to be barely perceptible to the human ear in outdoor environments and would be considered an insignificant increase in noise levels. This impact would be less than significant.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

MM NOI-1: Construction Noise. Implementation of the following mitigation measure shall be required to reduce the potential construction period noise impacts.

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Locate stationary noise-generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction area.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Construction activities shall be limited to daylight hours between 7 a.m. and 5:00 p.m., Monday through Friday. Project construction and grading activities would not occur on Saturdays, Sundays, or holidays.
- If construction activities are required outside of the daytime working hours for emergency work or to offset project delays due to inclement weather, the City would notify residents 48 hours in advance. If after-hour construction is required due to an emergency, the City would notify nearby residents immediately.
- The construction contractor would prohibit unnecessary idling of internal combustion engines.
- Where necessary noise-reducing enclosures or temporary barriers would be used on-site around noise-generating equipment and between construction activity-generating noise

and sensitive receptors to provide temporary relief from construction activity noise. Where feasible, existing barrier features (terrain, structures) would be used to block sound transmission, especially where construction noise levels are expected to exceed the maximum exterior noise standard.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact NOI-2 Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels?

Impact Analysis

During construction of the proposed project, equipment such as excavators, graders, and compactors may be used as close as 110 feet from the nearest sensitive receptor. Construction equipment that would be used during project construction would generate vibration levels between 0.0001 PPV and 0.011 PPV at 100 feet, as shown in Table 3.12-6. All of the groundborne vibration levels are below the Federal Transit Administration (FTA) vibration threshold at which human annoyance could occur of 0.10 PPV. As shown in Table 3.12-3, damage to older residential structures from transient sources could occur at 0.3 PPV.

Additionally, construction activities would be temporary and would likely occur during normal daytime working hours. Therefore, construction vibrations are not predicted to cause annoyance to sensitive receptors. As such, implementation of the proposed project would have a less than significant impact related to vibration.

Table 3.12-6: Vibration Source Levels for Construction Equipment

Type of Equipment	Peak Particle Velocity at 100 Feet	Threshold at which Human Annoyance Could Occur	Threshold at which Damage to Older Residential Structures Could Occur	Potential for Proposed Project to Exceed Threshold
Large Bulldozer	0.011	0.10	0.3	None
Loaded Trucks	0.010	0.10	0.3	None
Small Bulldozer	0.0001	0.10	0.3	None
Jackhammer	0.004	0.10	0.3	None
Source: Federal Transit Administration, Transit Noise and Vibration Impact Assessment Guidelines, May 2006				

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact NOI-3 A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact Analysis

As discussed in the long-term operational impact discussion under Impact NOI-1, implementation of the proposed project would result in a permanent increase in ambient noise levels. However, this increase would be less than 3 dBA for vehicular traffic, which would be a minimal increase. In addition, based on the site layout and distance from sensitive receptors, it is not anticipated that noise levels would exceed the City's acceptable noise level for industrial uses of 75 CNEL. Periodic noise increases associated with construction of the proposed project are discussed under Impact NOI-1 and Impact NOI-4.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact NOI-4 A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impact Analysis

During construction of the proposed project, noise from construction activities would add to the noise environment in the project area. Table 3.12-4 lists equipment that is expected to be used along with noise levels generated from the FHWA RCNM (Federal Highway Administration 2006). Lmax sound levels at the nearest sensitive receptor (110 feet) are shown along with the typical acoustic use factor. The acoustical use factor is the percentage of time each piece of construction equipment is assumed to be operating at full power (i.e., its loudest condition) during construction and is used to estimate Leq values from Lmax values. For example, the Leq value for a piece of equipment that operates at full power 50 percent of the time (acoustical use factor of 50) is 3 dB less than the Lmax value.

The nearest sensitive receptors to the project site are single-family residences located north of Midway Road, approximately 110 feet from construction activities. The residents could potentially be affected by construction noise above the City noise standard. Mitigation Measure NOI-1 would be implemented to minimize impacts from construction-generated noise. Therefore, the impacts would be less than significant with mitigation incorporated.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure NOI-1 is required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

Impact NOI-5	**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 of public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

Impact Analysis

The nearest public airports to the project site are the Nut Tree Airport and the Travis Air Force Base Airport, located approximately 2 miles south and approximately 9 miles south of the project site, respectively. There are two private heliports, Vaca Valley Hospital Heliport and Kaiser Vacaville Heliport, located approximately 3 miles south of the project site and approximately 2 miles southeast of the project site, respectively. Although the project is within 2 miles of the Nut Tree Airport, the project site falls outside the Nut Tree Airport noise contours as defined in the Nut Tree Airport Land Use Compatibility Plan and presented in the City's General Plan (Solano County 1988). Therefore, the proposed project would not expose persons working in the project vicinity to excessive aviation noise, and there would be no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact NOI-6 For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Impact Analysis

Two private heliports, Vaca Valley Hospital Heliport and Kaiser Vacaville Heliport are located approximately 3 miles south of the project site and approximately 2 miles southeast of the project site, respectively. People working at the project site would not be exposed to excessive noise levels generated by emergency helicopters accessing the hospital. Therefore, the proposed project would not expose persons working in the project vicinity to excessive aviation noise, and there would be no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

3.13 POPULATION AND HOUSING

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Induce substantial 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)?	☐	☐	☒	☐
b)	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒
c)	Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

3.13.1 Environmental Setting

Over the past several decades, Vacaville has grown from a small, rural town to a moderate-sized city. According to the U.S. Census, the city had a population of 92,428 in 2010. Since 2010, the city's population has increased by 7 percent to 98,977 people (California Department of Finance 2018; City of Vacaville 2013). The General Plan projected the following increases to occur in the city by 2035: 26,500 new residents, 9,720 new jobs, and 2.1 million square feet of new industrial space (115 acres) (City of Vacaville 2013). In comparison, the Association of Bay Area Governments projects the following to occur in the City by 2035: 111,400 new residents and 13,730 new jobs between 2010 and 2035 (City of Vacaville 2013). The project site is located within the city's Interchange Business Park Policy Plan area. The proposed project involves the development of a warehouse distribution center and does not include a residential component.

3.13.2 Methodology

The following evaluation of potential population, housing, and employment impacts associated with the proposed project was based on data obtained from the US Census, the California Department of Finance, and applicable planning documents from the City. The following impact discussions consider the impacts of the proposed project related to employment, population and housing in the City.

3.13.3 Environmental Impact Analysis

This section discusses potential impacts related to population and housing associated with the proposed project and provides mitigation measures where necessary.

Impact POP-1 Induce substantial 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)?

Impact Analysis

The project site and surrounding area are designated Industrial Park and Commercial Office by the General Plan, which limits new development in the project area to industrial and commercial uses. The proposed project would involve the development of three single-story warehouse buildings, with associated parking, access roads, driveways, landscaping, and utilities. Project utilities (water, sewer, wastewater) would connect to City infrastructure in the immediate vicinity of the project site. The proposed project does not involve any residential development.

The proposed project would employ up to 110 workers for the construction of Building 1, up to 60 workers for the construction of Building 2a, and up to 100 workers for the construction of Building 2b during the peak construction phase. Project construction activities would occur over 27 months. The proposed project would not affect the population of the city because the construction workforce is available from nearby areas. In addition, the project site is within commuting distance of the greater San Francisco Bay Area, so construction workers are not expected to relocate. Temporary construction activities are not expected to increase the demand for housing, and the impacts would be less than significant.

Operation of the proposed project would create new jobs and increase the demand for new employees. When completed, the proposed project is expected to employ up to 450 full-time employees. The growth that would occur from the proposed project is accounted for in the City's General Plan and would be consistent with the intent of the Interchange Business Park Policy Plan. Therefore, the increase in employment opportunities associated with the proposed project would result in a less than significant impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact POP-2 Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

Impact Analysis

The project site is predominantly undeveloped and does not contain residential development. Construction of the proposed project would not result in the displacement of housing, so the construction of replacement housing elsewhere would not be necessary. The proposed project would have no impact related to replacement housing.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact POP-3 Displace substantial numbers of people necessitating the construction of replacement housing elsewhere?

Impact Analysis

The project site is predominantly undeveloped and does not contain residential development. Construction of the proposed project would not result in the displacement of any people, so the construction of replacement housing elsewhere would not be necessary. The proposed project would have no impact related to the displacement of people.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

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3.14 PUBLIC SERVICES

	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?	☐	☐	☒	☐

3.14.1 Environmental Setting

Fire Protection

The VFD provides fire and emergency medical services to 28 square miles of the city as well as emergency medical services to 160 square miles of unincorporated county land surrounding the city. The VFD responds to calls for fires, hazardous materials emergencies, certain technical emergencies, vehicle accidents and extrication incidents, and first responder and transport services (City of Vacaville 2015a). The VFD also responds to mass casualty incidents within its larger response area as part of a countywide mutual aid system for ambulances. The VFD response time goal is to be on scene within 7 minutes or less starting from receipt of a 9-1-1 call 90 percent of the time (City of Vacaville 2018a). The VFD is expected to maintain satisfactory service levels for the city's estimated population growth with the addition of future fire stations. VFD Station 73, located at 650 Eubanks Court approximately 1 mile southwest of the project site, is the nearest fire station to the project site.

Police Protection

The Vacaville Police Department (VPD) provides law enforcement services to the City. The VPD employs 150 full-time employees (City of Vacaville 2018b). The VPD does not have a standard for staffing levels (City of Vacaville 2013). Responsibilities of the VPD include a 24/7 communication center, crime suppression and prevention, investigations, traffic patrol, and emergency service. There is one main VPD police station located at 660 Merchant Street, which

is approximately 5 miles southwest of the project site. The VPD has adopted standards for average response times. For Priority I calls, the adopted average response time standard is 6 minutes and 1 second. For Priority II calls, the adopted average response time standard is 16 minutes and 28 seconds. The VPD is meeting or exceeding its adopted standards for response times (City of Vacaville 2015a).

Schools

The following four school districts are in the city: Vacaville Unified School District, Travis Unified School District, Dixon Unified School District, and Fairfield-Suisun Unified School District. The nearest school is the Browns Valley Elementary School in the Vacaville Unified School District, located approximately 3 miles southwest of the project site. In addition, Solano Community College is approximately 1.5 miles southeast of the project site.

Parks

The City owns and operates three categories of parks, neighborhood, community, and regional, and operates accessible open space, special purpose facilities, and trails (City of Vacaville 2015a). The nearest park, Ridgeview Park, is a neighborhood park located 1.5 miles southwest of the project site.

Other Facilities

There are two libraries in the city: the Solano County Library and the Vacaville Public Library Cultural Center, approximately 4 miles southwest of the project site. The Solano County Library System in cooperation with the Vacaville Unified School District maintains the two libraries.

3.14.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the Public Facilities and Services Element of the General Plan, Parks and Recreation Element of the General Plan, the General Plan EIR, the City's Municipal Code, and Section 2.0, Project Description, of this ISMND.

3.14.3 Environmental Impact Analysis

This section discusses potential impacts on public services associated with the proposed project and provides mitigation measures where necessary.

Impact PUB-1	**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?**

Impact Analysis

Fire Protection

The proposed project does not involve a residential component. However, it would generate up to 450 full-time jobs, which would result in an increased demand for fire protection services at the project site. The project site is in the service area of the VFD. The proposed project would comply with the California Fire Code and include site-specific design features such as installing fire hydrants, connecting to the City's 12-inch fire water main system, ensuring adequate emergency access to project site, and requiring structures to be built with approved building materials. Conformance with the California Fire Code would reduce risks associated with fire hazards. The three proposed driveways on Midway Road and Crocker Drive would provide access in case of an emergency (Figure 2.0-4). Construction activities at the project site would temporarily reduce Midway Road to a one-lane road. The proposed project would implement a Traffic Control Plan to reduce impacts on emergency service and access to the surrounding area. Pursuant Section 11.01.020 of the City's Municipal Code, new development, including new industrial development, would pay the City's Public Facilities Impact Fee. The purpose of this fee is to provide for police, fire, and general city facilities and equipment to serve the needs of, and address the impacts from, new residential, industrial, commercial office, and other development (City of Vacaville 2018c). Payment of the Public Facilities Impact Fees would offset the cost of fire protection and paramedic service demands associated with the proposed project. Therefore, impacts to fire protection services would be less than significant.

Police Protection

Law enforcement services for the project site are provided by the VPD. The proposed project does not include a residential use that would induce population growth. The proposed project would generate up to 450 full-time jobs, which would result in an increased demand for police protection services at the project site. The VPD is currently meeting or exceeding its adopted standards for response times, and the proposed project would not substantially affect VPD response time goals. The proposed project would pay the City's Public Facilities Impact Fees in accordance with Section 11.01.020 of the City's Municipal Code. Payment of the Public Facilities

Impact Fees would offset the cost of police service demands associated with the proposed project. Therefore, impacts to police protection services would be less than significant.

Schools

The proposed project does not include a residential use that would induce population growth or increase student enrollment. Pursuant to Section 11.01.020 of the City's Municipal Code, Government Code Section 65995, and California Education Code Section 17620, new development, including residential, commercial, and industrial projects, are required to pay a School Facilities Mitigation Fee (City of Vacaville 2018c; Vacaville Unified School District 2017). Payment of these fees would offset the costs of school service demands and contribute to the construction or expansion of school facilities. Therefore, impacts to schools would be less than significant.

Parks

The proposed project does not include a residential component that would induce population growth in the project area. Pursuant to Section 11.01.020 of the City's Municipal Code, new development is subject to paying the City's Parks and Recreation Facilities Impact Fee (City of Vacaville 2018c). Payment of this fee would offset the costs of park and recreation demands and contribute to the City's meeting its recreation standards. Therefore, impacts to parks and recreation would be less than significant.

Other Public Facilities

The proposed project would not include a residential component that would induce population growth in the project area. No significant increase in the use of public facilities would occur. The proposed project would pay the City's Public Facilities Impact Fees in accordance with Section 11.01.020 of the City's Municipal Code. Payment of these fees would offset the costs of other public facility demands associated with the proposed project. Therefore, impacts to other public facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

3.15 RECREATION

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Would the project 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?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

3.15.1 Environmental Setting

Parks

The City owns and operates three categories of parks: neighborhood, community, and regional parks. In addition, the City owns and operates accessible open space, special purpose facilities, and trails. The nearest park is a neighborhood park, Ridgeview Park, situated on seven developed acres and located approximately 1.5 miles southwest of the project site. Centennial Park, which is situated on 265.1 acres, is approximately 2.5 miles away from the project site. (City of Vacaville 2015). The project site is situated in a commercial area away from recreation resources. The closest recreation resource to the project site is Pacific Gas and Electric (PG&E) Open Space, which is located east of I-505 approximately 0.25 mile from the project site (City of Vacaville 2015).

3.15.2 Methodology

The following analysis is based on a review of the General Plan Parks and Recreation Element, the General Plan EIR, and Section 2.0, Project Description, of this ISMND. The following impact discussions consider the impacts of the proposed project related to recreation.

3.15.3 Environmental Impact Analysis

This section discusses potential impacts to recreational facilities associated with the proposed project and provides mitigation measures where necessary.

Impact REC-1 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?

Impact Analysis

The proposed project would not affect access to the PG&E open space area, the closest recreation resource to the project site, nor increase use of the area. Although nearby, the open space area is separated from the project site by I-505. The project would also not increase the use of any neighborhood or regional parks or recreational facilities. It is anticipated that the construction workers who would work on the proposed project already live in the local area and would commute to the project site. No significant increase in the use of recreational facilities and no physical deterioration of these facilities would occur as a result of the proposed project, and there would therefore be no impact on recreation facilities.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact REC-2 Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Impact Analysis

The proposed project would not include residential uses that would induce population growth in the project area. Pursuant to Section 11.01.020 of the City's Municipal Code, new development is subject to the City's Parks and Recreation Facilities Impact Fee (City of Vacaville 2018c). Payment of this fees would offset the costs of park and recreation demands and contribute to the City's meeting its recreation standards. Additionally, is anticipated that the construction workers who would work on the proposed project already live in the local area and would commute to the project site. No significant increase in the use of recreational facilities would occur, and the proposed project would not require the construction or expansion of any recreation facilities. Therefore, there would be no impact to recreation facilities.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

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3.16 TRANSPORTATION AND TRAFFIC

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☒	☐
b)	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways	☐	☐	☒	☐
c)	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☒
d)	Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☒	☐
e)	Result in inadequate emergency access?	☐	☐	☒	☐
f)	Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☐	☐	☒

3.16.1 Environmental Setting

The analysis of the potential traffic impacts resulting from the proposed project is based primarily on the Vacaville LDK Transportation Impact Analysis Report prepared for the proposed project by DKS (Appendix K). For a more detailed description, please see Appendix K.

The project site is served primarily by Midway Road and I-505. These roadways are described below. Interstate 505 is an interstate spur that connects I-80 in Vacaville to I-5 in northern Yolo

County. Within the Vacaville city limits, I-505 is a four-lane divided freeway with a speed limit of 65 miles per hour. A full-access interchange to this facility is located at Midway Road immediately east of the project site. Midway Road is a rural two-lane roadway that runs east-west at the northern city limit of Vacaville. This roadway currently primarily serves local traffic.

Study Intersections

Five study intersections were identified for this analysis. These locations were selected based on discussions with the City. These intersections are:

- Midway Road and I-505 northbound ramps
- Midway Road and I-505 southbound ramps
- Midway Road and Hartley Road/eastern site access (project scenarios only)
- Midway Road and center site access (project scenarios only)
- Midway Road and western site access (project scenarios only)

Existing Level of Service

The traffic impacts associated with the proposed project were evaluated based on the City's General Plan policy standards, General Plan EIR, and the Traffic Study Report prepared for the proposed project. The Level of Service (LOS) of two relevant intersections is shown in Table 3.16-1; the LOS was calculated based on traffic volumes collected by the City in April and May 2015. The threshold levels of service are based on General Plan Policies TR-P3.1 through TR-P-3.5. Since the project area is not in a City-designated Priority Development Area, the LOS threshold of significance would be D for all intersections, as per Policy TR-P3.2. As shown in the table, both the intersections operate at LOS A under existing conditions.

Table 3.16-1: Existing Intersection Level of Service

Intersection	Control Type	Threshold LOS	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
Midway Road and I-505 Northbound Ramps	TWSC	D	2.9	A	7.6	A
Midway Road and I-505 Southbound Ramps	TWSC	D	1.3	A	1.2	A

Notes: Two-way stop control (TWSC)
Source: DKS 2018

Bicycle Facilities

There are currently no bike facilities in the project area. However, the General Plan Transportation Element indicates that Class II bike facilities (on-street, striped and signed bike lane) are proposed along Midway Drive and Eubanks Drive, adjacent to and west of the project site, respectively (City of Vacaville 2015).

Bus System

City Coach provides public transit service throughout the City. Additionally, Fairfield and Suisun Transit and the YOLOBUS, which is administered by the Yolo County Transportation District, provide additional transit service to Vacaville (City of Vacaville 2015). However, there are no bus routes that serve the project area. The closest bus stop, served by City Coach Route 4, is located at the Solano Community College Satellite Campus about 1.5 miles southeast of the project site (City Coach 2018).

3.16.2 Methodology

Traffic impacts are evaluated by determining the number of new trips that the proposed project would be expected to generate, distributing these trips to the surrounding street system based on existing or anticipated travel patterns specific to the project, and then analyzing the impact the new traffic would be expected to have on critical intersections or roadway segments.

Trip Generation

For this study, the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, was used to calculate the trips that would be generated by the proposed project. After discussion with City staff, the average trip generation rate for ITE Land Code 150: Warehousing was used to determine the total number of project trips. Given the proposed land use, no pass-by trip or diverted trip reductions were calculated. The proposed project trip generation is summarized in Table 3.16-2. As shown in the table, the proposed project would generate a total of 1,296 daily trips, 127 peak hour AM trips, and 141 peak hour PM trips.

Table 3.16-2: Project Trip Generation

Land Use	ITE Code	Size (KSF)	Daily Trip Rate/KSF	AM Peak Hour Vehicle Trip Rate/KSF			PM Peak Hour Vehicle Trip Rate/KSF		
				Total	In %	Out %	Total	In %	Out %
Warehousing	150	744.7	1.74	0.17	77	23	0.19	27	73
Land Use	**ITE Code**	**Daily Trips**		**AM Peak Hour Vehicle Trip Rate/KSF**			**PM Peak Hour Vehicle Trip Rate/KSF**		
				Total	**In %**	**Out %**	**Total**	**In %**	**Out %**
Warehousing 150	150	1296		127	98	29	141	39	102

Notes:
*KSF: 1000 square feet
Source: ITE Trip Generation Manual 10th Edition, 2017

Trip Distribution

Trip distribution describes where the proposed project trips are going once they leave the project site. Trip distribution was determined by using the City of Vacaville travel demand model. Peak hour trips coming from and going to the project site were tracked through the roadway network to determine percentages of total trips using each route to the project site. These

percentages were then used with the ITE-based trip generation to determine the specific trips added to each study intersection. The proposed project trip distribution is summarized in Table 3.16-3.

Table 3.16-3: Project Trip Distribution

Location	AM Trip Distribution		PM Trip Distribution	
	Inbound (%)	Outbound (%)	Inbound (%)	Outbound (%)
Midway Rd (West)	9	6	9	5
Midway Rd (East)	33	22	20	34
I-505 Northbound	50	5	66	8
I-505 Southbound	8	67	5	53
Source: DKS 2018.				

Traffic Scenarios

The Traffic Impact Study analyzed project traffic conditions for the following three scenarios:

- Existing Plus Project – This scenario considered intersection operations under existing conditions with the implementation of the proposed project.
- Existing Plus Approved/Pending (Baseline) with Project – This scenario considered impacts from all pending and approved City projects, including the proposed project. One baseline project on Eubanks Drive was identified.
- Cumulative Year 2035 – This scenario modeled traffic conditions assuming the completion of all development considered under the 2035 planning horizon accounted for in the General Plan.

In addition, the potential impacts of the proposed project on the transit network, bicycle network, and pedestrian facilities in the vicinity of the project site were qualitatively assessed.

3.16.3 Environmental Impact Analysis

This section discusses potential impacts associated with the proposed project and provides mitigation measures where necessary.

Impact TRANS-1 Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Impact Analysis

Construction

Construction trips would be staggered across the three construction phases. Construction hauling would also be limited to between 7:00 a.m. and 6:00 p.m. on weekdays. Since construction traffic would be temporary, and would be spread across the duration of construction, the proposed project would not cause streets in the project area to exceed LOS thresholds. Additionally, the proposed project includes preparation of a Traffic Control Plan that would include all detours, emergency access, and appropriate traffic controls during construction. Therefore, the impact of construction traffic would be less than significant.

Operations

The traffic study estimates that the proposed project would generate a total of 1,296 daily trips, 127 a.m. peak hour trips, and 141 p.m. peak hour trips. Based on the traffic study modeling, all five intersections studied would operate at LOS A for Existing Plus Project and Existing Plus Approved/Pending (Baseline) with Project scenarios. However, the Midway Road and I-505 Northbound Ramps interchange under the Year 2035 project conditions is expected to exceed City LOS thresholds both with and without the proposed project. Even so, the addition of project traffic volumes does not result in an increase in more than 5 seconds of delay at this intersection; thus, the proposed project meets the City's criteria for impact significance. Therefore, the proposed project would not significantly increase delay times at studied intersections, and the operations traffic impacts would be less than significant.

The State does not have a specific traffic threshold for implementing a left-turn lane. However, eastbound traffic along Midway Road currently exceeds 200 vehicles per hour under peak traffic conditions; this level of traffic warrants a left turn lane based on recommendations from the National Cooperative Highway Research Board (Appendix K). The proposed project would implement a two-way left turn lane along Midway Road in front of the project site. The two-way left turn lane would help the proposed project meet recommended traffic safety standards and reduce conflicts with tractor-trailers entering and exiting the project site.

The project site is not currently served by public transit, and the closest bus stop is located about 1.5 miles away from the project site. Project traffic is not expected to use roadways with existing bus stops and would not impact bus service times. Therefore, the proposed project would not impact the City's local transit service. While there are currently no bicycle facilities in the project area, Class II bike paths are planned along Midway Road and Eubanks Drive. The proposed project would not modify or interfere with these facilities during construction or operation.

Therefore, the proposed project would not conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system. The impact would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-2 Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Impact Analysis

The Solano Transportation Authority (STA) serves as the Congestion Management Agency (CMA) for Solano County. As the CMA, the STA must, under State law, prepare a Congestion Management Program (CMP) and update it every 2 years. The CMP is meant to outline the STA's strategies for managing the performance of regional transportation within the County. A CMP must contain several components: traffic LOS standards for State highways and principal arterials; multi-modal performance measures to evaluate current and future systems; a 7-year capital program of projects to maintain or improve the performance of the system or mitigate the regional impacts of land use projects; a program to analyze the impacts of land use decisions (Solano Transportation Authority 2015); and a travel demand element that promotes transportation alternatives to single-occupant vehicles. I-505 is listed as part of the CMP system, so traffic generated by the proposed project could potentially have an impact on the CMP system. However, the section of I-505 in the project vicinity is currently operating below its LOS threshold, and the proposed project would not generate traffic levels that would cause the roadway to exceed its LOS threshold. Therefore, the proposed project would not significantly impact the CMP system.

Additionally, the City has a General Plan goal of maintaining a "mid-range D" LOS at signalized intersections and a "D" LOS at two-way stop control intersections, but the City may allow temporary exceedance of this standard if future programmed improvements would improve performance (City of Vacaville 2015). As discussed in the previous section, project intersections would not experience increased delays of more than 5 seconds, so it would therefore meet the City's criteria for impact significance. Therefore, the proposed project would not conflict with applicable CMPs and would have a less than significant impact.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-3 Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?

Impact Analysis

The proposed project would not result in a change in air traffic patterns. The nearest airport is the Nut Tree Airport, which is located about 2 miles south of the proposed project (City of Vacaville 2015). The proposed project would not involve use of air transit, nor is it expected to cause any change in air traffic patterns. As such, the proposed project would not result in any changes to air traffic patterns and would not result in any associated safety risks. Therefore, there would be no impact.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

Impact TRANS-4 Substantially increase hazards to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact Analysis

During construction, the proposed project would use heavy construction equipment on arterial roadways. The use of roadways by heavy construction equipment can increase the risk to drivers and cyclists in the project area, for example, when haul trucks enter a proposed bike lane to access the project site from Midway Road. The proposed project includes preparation of a Traffic Control Plan that would include all detours, emergency access, and appropriate traffic controls during construction. Therefore, project construction would not create a transportation hazard, and the impact would be less than significant.

During operation, the proposed project's warehouse buildings would be consistent with the Interchange Business Park's planned large-scale manufacturing and wholesale development in the project area. The proposed project would implement all applicable design standards included in the Interchange Business Park Policy Plan and ADA guidelines to maintain efficient streets and paths for vehicles, bicycles, and pedestrians, such as constructing accessible walkways between accessible parking spaces and building entrances (City of Vacaville 2017). The addition of a two-way left turn lane on Midway Road would reduce the risks associated with vehicles using the three new driveways along Midway Road, particularly tractor-trailers, which are expected to be a major source of vehicles entering and exiting the project site. The City would review all site plans to ensure that all project driveways and walkways would provide clear sight lines and pedestrian safety features. Therefore, operation of the proposed project would not substantially increase hazards to a design feature, and the impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-5 Result in inadequate emergency access?

Impact Analysis

Any construction traffic, lane closure, or street staging would require approval from the City. Construction required to widen Midway Road may require reducing Midway Road to a single lane in the project area. Construction of the proposed project includes preparation of a Traffic Control Plan that would ensure that emergency access is provided on adjacent roads. Midway Road and Crocker Drive would provide emergency access. Additionally, the proposed project would be designed to incorporate all required VFD and VPD standards to ensure that implementation of the proposed project would not result in inadequate emergency access to the project site or areas surrounding the project site. Furthermore, the proposed project would not generate significant traffic volumes during operation that would interfere with emergency vehicle travel within the project area. Therefore, impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary

Level of Significance After Mitigation

Less Than Significant Impact.

Impact TRANS-6 Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

Impact Analysis

The nearest bus stop is located a little over 1 mile south of the proposed project (City Coach 2018). The proposed project is anticipated to have 450 full-time employees and is not expected to generate a significant number of bus riders. A bicycle rack would be installed near each building entrance on the north and south sides of the building to encourage other modes of transportation. Each bicycle rack would accommodate at least five bicycles, as required by Chapter 14.09.128 of the City's Municipal Code. Additionally, the proposed project would not prevent implementation of the proposed bike path along Midway Road. The proposed project would also not conflict with Solano Countywide Bicycle Plan (Solano Transportation Authority 2011).

Additionally, the proposed project would comply with the Interchange Business Park Policy Plan supporting alternative modes of transportation through appropriate design; the proposed project would implement site improvements including installation of curbs, sidewalks, signing, lighting, and striping in accordance with the Interchange Business Park Policy Plan guidelines. The proposed project would also comply with ADA requirements by providing accessible walkways throughout the project site. Therefore, impacts related to alternative transportation would be less than significant.

Level of Significance Before Mitigation

No Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

No Impact.

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3.17 TRIBAL CULTURAL RESOURCES

Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined by Public Resources Code section 21047 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

3.17.1 Environmental Setting

Refer to Section 3.5, Cultural Resources, for a description of the regulatory setting and the natural setting and for prehistoric- and historic-period contextual information for the identification of cultural resources.

AB 52

This section describes potential tribal cultural resources in the project area, defined as the project site and a one-half mile radius around the project site, and evaluates potential impacts to these resources from the construction and operation of project facilities. Local tribes and tribal representatives are the authority for identifying tribal cultural resources. ECORP contacted the NAHC on September 28, 2017, to request a search of the Sacred Lands File for tribal cultural resources in the project area and a list of Native American contacts who might have knowledge of such resources. The City was responsible for initiating tribal consultation for the proposed project in accordance with AB 52. The City initiated tribal consultation with the Yocha Dehe Wintun Nation on May 8, 2018.

AB 52 mandates consideration of Native American culture as part of the CEQA process. The goal of AB 52 is to promote involvement of California Native American Tribes in the decision-making process when it comes to identifying resources of importance to their cultures and developing mitigation for impacts to these resources. To reach this goal, AB 52 establishes a formal role for tribes in the CEQA process. CEQA lead agencies are required to consult with tribes about potential tribal cultural resources in the project area, the potential significance of project impacts, the development of project alternatives, and the type of environmental document that should be prepared. AB 52 specifically states that a project that may cause a substantial adverse change in the significance of a tribal cultural resource may have a significant effect on the environment.

Ethnographic Context

The project site is within the ethnographic territory of the Southern Wintun, or Patwin (Johnson 1978; Kroeber 1925:35). The Wintun/Patwin were the southernmost populations of a group of Native American cultures sharing a related set of languages of the Penutian linguistic stock; this group occupied a large area, including the southwestern portion of the Sacramento Valley as far south as San Pablo Bay and Suisun Bay during the late prehistoric and early historic eras (Johnson 1978). Though historical and ethnographic accounts refer to the Patwin, contemporary descendants identify themselves as Wintun, the term that will be used throughout this section. Wintun peoples are estimated to have numbered around 12,000 individuals at the time of contact (Kroeber 1925:35) who were organized in tribelets, each of which usually consisted of a principal village and a few satellite settlements. Tribelets were small, autonomous units with territories sometimes bounded by the limits of a small drainage.

While information describing Wintun political organization and social structures is relatively limited, ethnographic accounts do provide some information about Wintun culture. Each tribelet had a head chief, and each village had a village chief, whose duties included administering

economic and ceremonial activities. Village chiefs enjoyed high prestige as the "commissioner of crops" and primary distributor of resources (McKern 1922:246). Patriarchal authority was subject only to tribal control, and inheritance was patrilineal. This included property and personal effects as well as non-tangible items such as names and ritualistic knowledge (Johnson 1978; McKern 1922).

Wintun subsistence depended on hunting, fishing, and gathering a wide variety of plant resources that were located within their territory. Acorns were a major part of their diet and were obtained from hill and mountain oaks communally owned by the tribelet (Johnson 1978:355). Other easily gathered resources included blackberries, elderberries, wild grapes, tule shoots, roots, bulbs, honey, salt, and tobacco (Kroeber 1932:280), though some plants that were important to other Native American groups were not known by Kroeber's Wintun informants, including buckeye, hazelnut, manzanita, and Brodiaea species.

The Wintun manufactured a variety of utilitarian and ceremonial/luxury items, including baskets, stone tools, mortars and pestles, shell beads, and clothing. Shell beads were manufactured for personal adornment and as a medium of exchange. River Wintun also built tule balsa boats to facilitate river travel and acquisition of fish resources (Johnson 1978). The Wintun traded for various commodities and subsistence resources using clamshell disc beads as a medium of exchange (Hughes 1994; Kehoe 1981).

The first documented European expedition within the vicinity of the proposed project was the Pedro Fages expedition of 1772, which reached the Carquinez Strait. This expedition was followed 4 years later by the Anza expedition, which was searching for a land route to Point Reyes. The first crossing of the strait did not occur until 1810, when Gabriel Moraga led a raid against the Suisun tribe. Initial entries into the region culminated with the establishment of Mission San Francisco Solano in Sonoma in 1823 (Hoover et al. 2002). Mission records show that between 1815 and 1822, a total of 280 Ululato (a Patwin village southeast of Vacaville) people were baptized at Mission San Francisco, and between 1824 and 1833, another 67 were baptized at Mission San Francisco Solano (Milliken 1995).

3.17.2 Methodology

To identify tribal cultural resources, a cultural resources inventory and assessment report dated January 29, 2018, was prepared by ECORP (Appendix G). Background information and literature were consulted to identify archaeological tribal resources and to gather ethnographical information for the project area; a pedestrian survey was also conducted.

According to the cultural resources assessment, a search of the Sacred Lands File by NAHC did not indicate the presence of Native American cultural resources in the project area (ECROP Consulting 2017; Appendix G).

AB 52 Consultation Results

The City conducted AB 52 tribal outreach by sending a letter to tribes that have previously expressed an interest in participation by written request. Pursuant to the City's requirement for

consultation under AB 52, the Yocha Dehe Wintun Nation was contacted about the proposed project in a letter dated May 8, 2018. Pursuant to the statute, the Tribe was required to respond in writing within 30 days. On May 24, 2018, the City received a response from the Tribe indicating that a tribal monitor was not needed for the project. The Tribe, however, recommended cultural sensitivity training for project workers prior to project implementation. This recommendation is standard mitigation and is included as Mitigation Measure CUL-1 and Mitigation Measure CUL-2.

3.17.3 Environmental Impact Analysis

This section discusses potential impacts on tribal cultural resources associated with the proposed project and provides mitigation measures where necessary.

Impact TRIB-1 Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined by Public Resources Code Section 21047 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Impact Analysis

The archival records search performed as part of the cultural resources analysis did not identify any known tribal cultural resources at the project site or within a half mile radius around the site. The initial field review of the project area noted that the project site has been disturbed and that it did not exhibit any signs of previously unidentified subsurface tribal cultural resources within or adjacent to the project site. In addition, no sacred lands were identified through the NAHC outreach. The Yocha Dehe Wintun Nation, and the Cortina Indian Rancheria of Wintun Indians were contacted for additional information regarding known resources within the project site. The tribes did not identify any cultural resources at the project site. Therefore, the proposed project is not anticipated to have an impact on any known or potential tribal cultural resources.

However, subsurface construction activities associated with the proposed project could potentially damage or destroy previously undiscovered unique tribal cultural resources. Mitigation Measure CUL-1 and Mitigation Measure CUL-2 require implementation of standard inadvertent discovery procedures and worker awareness training to reduce potential impacts to

previously undiscovered subsurface unique tribal cultural resources. With implementation of these mitigation measures, potential impacts would be reduced to a less than significant level.

Level of Significance Before Mitigation

Potentially Significant Impact.

Mitigation Measures

Mitigation Measure CUL-1 and Mitigation Measure CUL-2 are required.

Level of Significance After Mitigation

Less Than Significant Impact with Mitigation.

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3.18 UTILITIES AND SERVICE SYSTEMS

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☒	☐
b)	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☒	☐
c)	Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☒	☐
d)	Have sufficient water supplies available to serve the proposed project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☒	☐
e)	Result in a determination by the wastewater treatment provider that serves or may serve the proposed project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☒	☐
f)	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☒	☐
g)	Comply with federal, State, and local statutes and regulations related to solid waste?	☐	☐	☒	☐

3.18.1 Environmental Setting

Wastewater Collection/Treatment

Treatment of wastewater from the City's collection system takes place at the Easterly Waste Water Treatment Plant (WWTP), located south of the unincorporated community of Elmira. The Easterly WWTP provides treatment of wastewater discharged from residential, commercial, and industrial development in the City. The Easterly WWTP has an average dry-weather flow capacity of 15 million gallons per day (mgd). The peak dry-weather flow (flows during a typical day without precipitation) is 27 mgd, and the peak wet weather flow (flows during a storm event) is 55 mgd (City of Vacaville 2018a).

The City is in the process of developing a Wastewater Facilities Master Plan following the City's 2015 General Plan Update. As of August 2018, the Wastewater Facilities Master Plan is in the final draft stage and has not been approved by City Council (City of Vacaville 2018a). The draft plan identifies capital improvements needed to ensure the long-term functionality of the City's sewer collection system as planned development occurs. Currently, the Easterly WWTP's average dry weather flow is 7.51 mgd, which is below the facility's 15 mgd capacity and within the design capacity of the WWTP (City of Vacaville 2018a). The Easterly WWTP would have sufficient capacity to meet expected population growth over the next decade because the City plans to expand the WWTP to accommodate wastewater produced by future development allowed under the General Plan. The Easterly WWTP is in the final stage of planned construction improvements that are needed to meet the requirements of the City's current NPDES discharge permit (City of Vacaville 2018b).

Stormwater Management

The City's drainage systems include creeks, constructed channels, and an extensive network of storm drain pipes that collect and convey runoff from the streets and adjacent land. In addition, the City has constructed several detention basins to reduce flooding in the city and to store increased runoff resulting from new development.

The Clean Water Act prohibits the discharge of pollutants to navigable waters from a point source unless authorized by an NPDES permit. The SWRCB is responsible for issuing NPDES permits to cities and counties through Regional Water Quality Control Boards (RWQCB), in this case, the Central Valley RWQCB. The SWRCB elected to adopt a statewide general permit (Water Quality Order No. 2003-0005-Department of Water Quality) for Small Municipal Separate Storm Sewer System operators to regulate stormwater discharges under a single permit. Permittees must develop and implement a Stormwater Management Plan with the goal of reducing the discharge of pollutants to the maximum extent practicable. The City is considered a permittee under the statewide general permit. In addition, Chapter 14.26.030 of the City's Municipal Code contains requirements to prevent, control, and reduce stormwater pollution from new development and construction activities.

Water Supply

The City provides potable water to users within the city limits via a network of water mains, transmission mains, reservoirs, groundwater wells, booster pump stations, and treatment plants. Three sources supply the City's water: the Solano Project, the State Water Project, and groundwater from City wells. The primary component of the Solano Project is Lake Berryessa, which provides storage of 1.6 million acre-feet of water. Water from Lake Berryessa is diverted through the Putah Diversion Dam to the Putah South Canal, which transports water to the City. Water from the State Water Project is supplied by the North Bay Aqueduct, which provides 6,100 acre-feet per year through the Solano County Water Agency (City of Vacaville 2018c). Groundwater is extracted from 13 existing wells in the City, which withdraw water primarily from the Tehama Formation. The City's annual groundwater pumping varies. As of 2015, the average annual groundwater pumping was 5,222 acre-feet (City of Vacaville 2018c).

The City updated its Water System Master Plan following the City's 2015 General Plan Update. As of August 2018, the Water System Master Plan was in the final draft stage and has not been approved by City Council (City of Vacaville 2018c). The draft plan presents a model of the City's water system and identifies capital improvements needed to ensure the long-term functionality of the water system as planned development occurs. According to the draft plan, the City's measured average day water demand in 2016 was 14.62 mgd, and the measured average day demand in 2040 is projected to be 25.29 mgd.

The City's 2015 UWMP calculates the past, current, and projected water use and water supply through 2040. The 2015 UWMP calculated the City's current available annual water supply to be 22.4 mgd and calculated the projected water supply available in 2040 to be 29.5 mgd. Based on these calculations, the City's average water demand (14.62 mgd) and future water demand (25.29 mgd) would be below the City's annual (22.4 mgd) and future (29.5 mgd) water supply allocations. Therefore, the 2015 UWMP determined the City's water supply would be adequate to offset future water demands projected for buildout of the General Plan (City of Vacaville 2016).

Solid Waste

The City contracts with a private waste collection company to provide weekly solid waste, green waste, and recyclable materials collection for Vacaville residents and commercial businesses. Solid waste collected in the City is disposed of at the Hay Road Landfill, located at 6426 Hay Road in the City. The California Department of Resources Recycling and Recovery (CalRecycle) has allocated to the City a disposal rate target of 6.5 pounds of waste per resident per day (City of Vacaville 2015a). As of 2016, the City's disposal rate was 5.3 pounds of waste per resident per day, which was well below the CalRecycle target (CalReycle 2016).

According to CalRecycle, the maximum permitted throughput is 2,400 tons per day. The total capacity of the landfill is 37 million cubic yards. As of 2016, it was projected that the landfill would reach capacity in 2077 (CalRecycle 2018). The City has established several recycling programs to reduce the amount of waste disposed at the Hay Road Landfill and therefore extend its expected operation. Division 8.08 (Solid Waste, Yard Waste, and Household Hazardous

Waste) of the Vacaville Municipal Code regulates the collection and disposal of solid waste, yard waste, and household hazardous materials.

3.18.2 Methodology

The following analysis is based on a review of documents pertaining to the project site, including the General Plan, the General Plan EIR, 2015 UWMP, 2018 Draft Wastewater Facilities Master Plan, 2018 Draft Water Supply Master Plan, and Section 2.0, Project Description, of this ISMND. The following impact discussions consider the impacts of the proposed project related to utilities and service systems in the City.

3.18.3 Environmental Impact Analysis

This section discusses potential impacts related to utilities and service systems associated with the proposed project and provides mitigation measures where necessary.

Impact UTIL-1 Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Impact Analysis

The proposed project would not exceed the wastewater treatment requirements of the Central Valley RWQCB. The proposed project would involve the development of three warehouse buildings, Building 1, Building 2a, and Building 2b, with associated parking, access roads, landscaping, and utilities on 68.90 acres. An existing 10-inch trunk line, located south of the former SaveMart Distribution Center, would serve the proposed project. An 8-inch collector line would be installed for the three proposed warehouse buildings and would connect to a proposed private sewer lift station. The sewer lift station would increase the elevation of the project sewer lines by 13 feet to allow wastewater to flow to the existing 10-inch trunk line. Wastewater generated by the proposed project would be treated by the Easterly WWTP, which operates in accordance with the regulations of the Central Valley RWCQB and the Clean Water Act of 1972.

According to the Draft Wastewater Master Plan, the Easterly WWTP flow rate in 2015 was measured at 7.51 mgd, which is well below the WWTP's maximum capacity of 15 mgd. As indicated in Table 3.18-1, Estimated Wastewater Generation, the proposed project would generate an estimated 113,938 gpd of wastewater.

Table 3.18-1: Estimated Wastewater Generation

Project Component	Area (sf)	Wastewater Generation, Gallons per day (gpd)	
		Per Unit	Total
Building 1	617,760	0.153 gpd per sf	94,517 gpd
Building 2a	33,696	0.153 gpd per sf	5,155 gpd
Building 2b	93,240	0.153 gpd per sf	14,266 gpd
Total			**113,938 gpd**
Source: pers. comm. PEI Engineering			

The proposed project's estimated wastewater generation would represent a fraction of the Easterly WWTP's capacity and would allow the facility to operate at its current flow rate of 7.51 mgd, which is within the WWTP's capacity. Therefore, the available capacity of the Easterly WWTP would accommodate the treatment requirements of the proposed project. In addition, because the Easterly WWTP is managed by the City's Wastewater Facility Master Plan, which is intended to ensure the long-term functionality of the City's sewer collection system as planned development occurs, the proposed project would not violate any standards set forth by the Central Valley RWQCB. Therefore, impacts to wastewater treatment requirements would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-2 Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?

Impact Analysis

Wastewater Treatment Facilities

Wastewater generated by the proposed project would be treated at the Easterly WWTP. The Easterly WWTP has an average dry-weather flow capacity of 15 mgd. The Easterly WWTP operates at 7.51 mgd, which is below the permitted 15 mgd capacity. As shown in Table 3.18-1, Estimated Wastewater Generation, the proposed project would generate 113,938 gpd of wastewater. The proposed project would connect to an existing 10-inch trunk line, located south

of the former SaveMart Distribution Center. The proposed project would install an 8-inch collector line for the three warehouse buildings and would connect to a proposed private sewer lift station. The sewer lift station would allow wastewater to flow to the existing 10-inch trunk line. The 8-inch collector and the sewer lift station would adequately serve the proposed project and would be designed and constructed in accordance with the City's Sanitary Sewer System Standard Specifications, Wastewater Master Plan, and the General Plan. In addition, the proposed project would be subject to Chapter 11.01 of the City's Municipal Code, requiring payment of the Sewer System Impact Fee. The purpose of this fee is to provide for the construction of sewer and wastewater facilities, including sewer drains, treatment plants, and aeration ponds to offset the demand on current wastewater facilities of new development. Therefore, impacts to wastewater treatment facilities would be less than significant.

Water Treatment Facilities

The proposed project would be served by a proposed 12-inch-diameter water main installed by the City's Public Works Department as part of the "Improvement Plans for the Crocker Drive Water Line Extension Project." Construction of this 12-inch-diameter water main is separate from the proposed project evaluated in this ISMND. The City's 12-inch-diameter water main would extend north from Crocker Drive through the project site and extend west in Midway Road to connect to an existing water main in Eubanks Road. The proposed project would install 2-inch-diameter water mains to serve Building 1, Building 2a, and Building 2b with fire water. The 2-inch-diameter water mains would connect to a proposed 12-inch fire water main, which would be looped through the project site and sourced from the City's proposed 12-inch water main. The proposed water main would be adequately sized to serve the proposed project. Water system improvements would be designed and constructed in accordance with the City's Potable Water System Standard Specifications, Water System Master Plan, the adopted Fire Code, and the General Plan. In addition, the proposed project would be subject to Chapter 11.01 of the City's Municipal Code, requiring payment of the Water System Impact Fee. The purpose of this fee is to provide for the construction of new water mains for potable water and fire protection. Therefore, impacts to water treatment facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-3 Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?

Impact Analysis

The proposed project would involve the development of a warehouse distribution center and would create 1,548,000 square feet of impervious surface at the project site. The proposed project would include installing a 12- to 24-inch storm drain to serve Building 1, Building 2a, and Building 2b and would create approximately 268,000 square feet of pervious surface at the project site. Pervious surface would consist of landscape areas and bioswales located on the southern, western, and eastern boundaries of the project site and along the north and south sides of Gibson Canyon Creek. Stormwater runoff would be directed to these areas and treated before entering the creek. The bioswales would reduce the amount of runoff entering Gibson Canyon Creek.

The proposed storm drainage improvements would be designed and constructed in accordance with the City's Storm Drain Standard Specifications. The proposed project would be subject to Chapter 11.01, Development Impact Fees, of the City's Municipal Code, requiring payment of the City's Drainage and Stormwater Detention Facilities Impact Fee. The purpose of this fee is to provide for the construction of drainage and stormwater detention projects to meet the needs of future growth in the City. Payment of this fee would offset the costs of the project's demand on City stormwater drainage facilities. Therefore, impacts to stormwater facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-4 Have sufficient water supplies available to serve the proposed project from existing entitlements and resources, or are new or expanded entitlements needed?

Impact Analysis

The proposed project would be served by a proposed 12-inch-diameter water main installed by the City's Public Works Department. The proposed 12-inch-diameter water main would be installed by the City Public Works Department as part of a separate project. The proposed project would install a 2-inch-diameter water main to serve Building 1, Building 2a, and Building

2b with fire water. The 2-inch diameter water mains would connect to a proposed 12-inch fire water main, which would be looped through the project site and sourced from the City's proposed 12-inch water main. As shown in Table 3.18-2, Estimated Water Demand, the proposed project's potential water consumption is 61,619 gpd.

Table 3.18-2: Estimated Water Demand

Project Component	Area (sf)	Water Demand, Gallons per day (gpd)	
		Per Unit	Total
Building 1	617,760	0.86 gpd per sf	53,127 gpd
Building 2a	33,696	0.86 gpd per sf	2,898 gpd
Building 2b	93,240	0.86 gpd per sf	5,594 gpd
Total			**61,619 gpd**
Source: pers. comm. PEI Engineering			

According to the 2015 UWMP, the City's water demand is 14.62 mgd and its available annual water supply is 22.4 mgd. The 2015 UWMP estimated the City's projected water demand and water supply for 2040 and determined the City's water supply would be adequate to offset future development water demand during normal, single-dry, and multi-dry years through 2040 (City of Vacaville 2016). The proposed project's potential water demand would represent a fraction of the City's annual water demand, and the City's current entitlements would serve the proposed project. In addition, the proposed project would incorporate landscape plantings in accordance with the City's Water Efficient Landscape Ordinance by planting drought-tolerant plants and using a water-efficient planting and irrigation system. Therefore, the proposed project would not result in the need for expanded water entitlements, and the impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-5 Result in a determination by the wastewater treatment provider that serves or may serve the proposed project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact Analysis

The Easterly WWTP has a design flow capacity of 15 mgd. Currently, the Easterly WWTP's average dry-weather flow is 7.51 mgd, providing approximately 7.5 mgd of unused capacity. The proposed project would install an 8-inch collector line for the three proposed warehouse buildings. The 8-inch collector line would connect to a 10-inch trunk line, located south of the former SaveMart warehouse building, and a proposed private sewer lift station. The sewer lift station would allow wastewater to flow to the existing 10-inch trunk line. As shown in Table 3.18-1, the proposed project would generate approximately 113,938 gpd and would allow the WWTP facility to operate at its average daily flow rate of 7.51 mgd. The 8-inch collector line and the sewer lift station would adequately serve the proposed project and would be designed and constructed in accordance with the City's Sanitary Sewer System Standard Specifications, Wastewater Facility Master Plan, and the General Plan. Therefore, the Easterly WWTP has adequate capacity to support the proposed project's wastewater demand, and the impacts would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-6 Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Impact Analysis

The proposed project would be expected to generate waste during the construction and operation phases; however, it would not be expected to result in inadequate landfill capacity. Solid waste from the project site would be collected and deposited at the Hay Road Landfill, approximately 9 miles southeast of the project site. The Hay Road Landfill is approximately 640 acres and its total capacity is 37 million cubic yards. Currently, the landfill is listed as having a remaining capacity of approximately 30 million cubic yards and is expected to operate until 2077 (CalRecycle 2018). In addition, the City has established several programs to facilitate recycling, which are expected to reduce solid waste disposal demands on the Hay Road Landfill and extend its operation.

During operation of the proposed project, solid waste would be collected and properly disposed of by Recology Vacaville Solano. Operation of the proposed project is expected to employ up to 450 employees. According to CalRecycle, the City's annual per capita disposal rate per employee in 2016 was 14.8 pounds. As shown in Table 3.18.3, Estimated Solid Waste Generation, the proposed project would generate approximately 6,660 pounds of solid waste per day.

Table 3.18-3: Estimated Solid Waste Generation

Project Component	New Employees	Generation Rate (lbs/day/person)	Pounds per Day	Tons per Day	Tons per year
Commercial-Warehouse Facility	450	14.8	6,660	3.33	1,216
Source: CalRecycle 2016					

The Hay Road Landfill has approximately 80 percent remaining capacity, and the amount of waste from the proposed project would be a marginal fraction of the City's total solid waste. Based on the Hay Road Landfill permitted intake of 2,400 tons per day, waste generated by the proposed project would represent approximately 0.14 percent of the landfill's daily capacity. Therefore, the proposed project contribution to solid waste facilities would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

Impact UTIL-7 Comply with federal, State, and local statutes and regulations related to solid waste?

Impact Analysis

The proposed project would be served by curbside solid waste and recycling services, which are standard services for commercial uses in the City. Solid waste disposal must follow the requirements of the contracted waste hauler and disposal facility, which follows local, State, and federal statutes and regulations related to the collection and disposal of solid waste.

California State AB 939 mandates the reduction of solid waste disposal in landfills by 75 percent in 2020. Division 8.08 (solid waste, yard waste, and household hazardous waste) of the City's Municipal Code implements the approved Source Reduction and Recycling Element required by AB 939 and regulates the collection and disposal of solid waste, yard waste, and household hazardous materials. The proposed project would comply with all applicable local, State, and federal statutes and regulations related to solid waste. Therefore, the impacts related to solid waste would be less than significant.

Level of Significance Before Mitigation

Less Than Significant Impact.

Mitigation Measures

No mitigation is necessary.

Level of Significance After Mitigation

Less Than Significant Impact.

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3.19 MANDATORY FINDINGS OF SIGNIFICANCE

	Would the Project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Does the project have the potential to 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, 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?	☐	☒	☐	☐
b)	Does the project have impacts that are individually limited, but cumulative considerable? ("Cumulative considerable" means that the incremental impacts of a project are considerable when viewed in connection with the impacts of past projects, the impacts of other current projects, and the effects of probable future Projects)?	☐	☒	☐	☐
c)	Does the project have environmental impacts which will cause substantial adverse impacts on human beings, either directly or indirectly?	☐	☒	☐	☐

a) Does the project have the potential to 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, 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?

Impact Analysis

As evaluated in this ISMND, the proposed project would not 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; reduce the number or restrict the range of an endangered, rare, or threatened species; or eliminate important examples of the major periods of California history or prehistory. Mitigation Measures BIO-1, BIO-2, BIO-3, BIO-4, BIO-5, BIO-6, BIO-7, BIO-8, BIO-9, CUL-1, CUL-2, and CUL-3 have been included herein to lessen the significance of potential impacts to special-status species and habitats, and inadvertent discovery of cultural resources to reduce potential impacts to cultural resources as less than significant.

b) Does the project have impacts that are individually limited, but cumulative considerable? ("Cumulative considerable" means that the incremental impacts of a project are considerable when viewed in connection with the effects of past projects, the impacts of other current projects, and the impacts of probable future projects)?

Impact Analysis

The 2013 General Plan and ECAS EIR evaluated the cumulative effects associated with growth and development in the City. The proposed project would not result in any new cumulative impacts not previously identified in the General Plan and ECAS EIR. All cumulative impacts resulting from the proposed project related to aesthetics, air quality, geology, greenhouse gases, hazards, hydrology, and noise would be mitigated with the implementation of Mitigation Measures AES-1, AIR-1, GEO-1, GHG-1, HAZ-1, HYD-1, and NOI-1.

c) Does the project have environmental impacts which will cause substantial adverse impacts on human beings, either directly or indirectly?

Impact Analysis

An air quality analysis and an HRA were performed for the proposed project. All environmental impacts which would cause substantial adverse impacts on human beings, either directly or indirectly would be mitigated with the implementation of Mitigation Measures AIR-1.

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Air Quality and Greenhouse Gas Impact Assessment Model Assumptions and Methodology LDK Warehouse Project

September 19, 2018

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1.0 MODEL PARAMETER AND ASSUMPTIONS

1.1 MODEL SELECTION

Air pollutant emissions can be estimated by using emission factors and a level of activity. Emission factors are the emission rate of a pollutant given the activity over time, for example, grams of NO_X per horsepower-hour. The California Air Resources Board (ARB) has published emission factors for on-road mobile vehicles/trucks in the EMFAC mobile source emissions model and emission factors for off-road equipment and vehicles in the OFFROAD emissions model. An air emissions model (or calculator) combines the emission factors and the various levels of activity and outputs the emissions for the various pieces of equipment.

The California Emissions Estimator Model (CalEEMod) is a statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and greenhouse gas (GHG) emissions associated with both construction and operations from a variety of land use projects. The model quantifies direct emissions from construction and operation activities (including vehicle use), as well as indirect emissions, such as GHG emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. Further, the model identifies mitigation measures to reduce criteria pollutant and GHG emissions along with calculating the benefits achieved from measures chosen by the user.

The model was developed for the California Air Pollution Officers Association (CAPCOA) in collaboration with the California Air Districts. Default data (e.g., emission factors, trip lengths, meteorology, source inventory, etc.) have been provided by the various California Air Districts to account for local requirements and conditions.

Construction emissions (excluding those from helicopters), emissions from soil disturbance, and emissions from vehicle travel on paved and unpaved roads were estimated using CalEEMod version 2016.3.2.

1.2 CONSTRUCTION MODELING ASSUMPTIONS

1.2.1 Schedule

Construction is assumed to begin in April of 2019 and be completed by July 2021. The duration of construction activity and associated equipment represents a reasonable approximation of the expected construction fleet as required by CEQA guidelines. The construction schedule is provided in Table 1.

Table 1: Construction Schedule

Phase	Anticipated Start Date	Anticipated End Date	Total Number of Days
Demolition	4/1/2019	8/2/2019	90
Mobilization/culverts	8/3/2019	8/19/2019	11
Grading	8/20/2019	3/2/2020	140

B1 Construction	3/3/2020	10/12/2020	160
B2a Construction	10/12/2020	12/25/2020	55
B2b Construction	1/1/2021	4/12/2021	72
Paving	4/13/2021	5/10/2021	20
Architectural Coating	5/12/2021	6/8/2021	20

1.2.2 Construction Off-Road Equipment.

Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and prevailing weather conditions. Construction emissions result from on-site and off-site activities. On-site emissions principally consist of exhaust emissions from the activity levels of heavy-duty construction equipment, motor vehicle operation, and fugitive dust (mainly PM_{10}) from disturbed soil. Off-site emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM_{10} and $PM_{2.5}$).

The construction equipment list is provided in Table 2.

Table 2: Construction Equipment Assumptions

Phase	Equipment	Unit Amount	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	1	81	0.73
	Excavators	2	158	0.38
	Rubber Tire Dozers	2	247	0.4
Mobilization/culverts	Rubber Tire Dozers	2	247	0.4
	Tractors/Loaders/Backhoes	3	97	0.37
Grading	Excavators	2	158	0.38
	Graders	1	187	0.41
	Rubber Tire Dozers	1	247	0.4
	Scrapers	2	367	0.48
	Tractors/Loaders/Backhoes	2	97	0.37
B1 Construction	Cranes	1	231	0.29
	Forklifts	2	89	0.2
	Generator Sets	1	84	0.74
	Tractors/Loaders/Backhoes	2	97	0.37
	Welders	1	46	0.45
B2a Construction	Cranes	1	231	0.29
	Forklifts	2	89	0.2
	Generator Sets	1	84	0.74
	Tractors/Loaders/Backhoes	2	97	0.37
	Welders	1	46	0.45
B2b Construction	Cranes	1	231	0.29

	Forklifts	2	89	0.2
	Generator Sets	1	84	0.74
	Tractors/Loaders/Backhoes	2	97	0.37
	Welders	1	46	0.45
Paving	Pavers	2	130	0.42
	Paving Equipment	2	132	0.36
	Rollers	2	80	0.38
Architectural Coating	Air Compressors	1	78	0.48

1.2.3 On-Road Construction-Related Vehicle Trips

Off-site construction emissions are caused by motor vehicle exhaust from delivery vehicles, worker traffic, and road dust (PM10 and PM2.5). Table 3 provides a summary of the construction-related vehicle trips. CalEEMod default values were used to estimate the number of construction-related vehicle trips. CalEEMod quantifies the number of construction workers by multiplying 1.25 times the number of pieces of equipment for all phases (except Building Construction and Architectural Coating). The number of worker trips was determined by the Traffic Impact Study for the project. The default values for hauling trips are based on the assumption that a truck can haul 20 tons (or 16 cubic yards) of material per load. If one load of material is delivered, CalEEMod assumes that one haul truck importing material will also have a return trip with an empty truck (e.g., 2 one-way trips).

The fleet mix for worker trips is light-duty passenger vehicles to light-duty trucks. The vendor trips fleet mix is composed of a mixture of medium and heavy-duty diesel trucks. The hauling trips are assumed to be 100% heavy-duty diesel truck trips.

CalEEMod default trip lengths were used for the worker (10 miles), vendor (9 miles), and hauling trips (20 miles).

Table 3: Construction Related Vehicle Trips

Phase	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length
Demolition	15	0	114	15	9	20
Mobilization/culverts	18	0	0	15	9	20
Grading	20	0	1250	15	9	20
B1 Construction	110	166	0	15	9	20
B2a Construction	60	166	0	15	9	20
B2b Construction	100	166	0	15	9	20
Paving	15	0	0	15	9	20
Architectural Coating	85	0	0	15	9	20

1.3 OPERATIONAL MODELING ASSUMPTIONS

Operational emissions are those emissions that occur during operation of the proposed project. The primary sources are summarized below.

1.3.1 Motor Vehicles

Motor vehicle emissions refer to exhaust and road dust emissions from the automobiles that would travel to and from the project site.

Table 8D in the Transportation Impact Study (TIS) provides a summary of the daily trip generation based on the project description at the time of preparation. The daily trip rate (per 1000 square feet per day) was updated to 1.74 to reflect the results of the TIS.

1.3.2 Vehicle Fleet Mix

The vehicle fleet mix is defined as the mix of motor vehicle classes active during the operation of the proposed project. Emission factors are assigned to the expected vehicle mix as a function of vehicle class, speed, and fuel use (gasoline- and diesel-powered vehicles).

The default fleet mix for the Yolo-Solano AQMD was used for this project. Using the trip generation above, 1,296 trips are expected to be generated daily, split among vehicle classes as determined by the YSAQMD.

1.3.3 Area Sources

Area sources consist of wood burning devices, consumer products, area architectural coatings and landscaping emissions. It is assumed that the project would not contain any wood burning devices.

1.3.4 Consumer Products

Consumer products are various solvents used in non-industrial applications that emit ROGs during their product use. These typically include cleaning supplies and aerosols. The default CalEEMod value was used for this project.

1.3.5 Architectural Coatings (Painting)

Paints release VOC emissions. The building would be repainted on occasion. CalEEMod defaults were used for this purpose.

1.3.6 Landscaping Emissions

CalEEMod default duration for which landscaping equipment would be used were utilized to estimate potential emissions for the proposed project.

1.3.7 Energy Use

The emissions associated with the building electricity and natural gas usage are estimated based on the land use size and type. The electricity energy use is in units of kilowatt hours per size metric for each land use type. Natural gas use is in units of a thousand British Thermal Units per size metric for each land use type.

1.3.8 Water and Wastewater Use

Supplying and treating water for building use generates GHG emissions. Depending on the specific water supply used or treatment method used these numbers can vary over a wide range. Supplying water is bringing the water from its primary source such as the ground, river, or snowpack to the treatment plant. Distributing the water is bringing the water from the treatment plant to the end users. The electricity intensity factors are multiplied by the utility GHG emissions intensity factors and are classified as indirect emissions.

Wastewater may also have direct emissions of GHGs. These depend on the type of wastewater treatment system (e.g. septic, aerobic or lagoons) used and therefore the wastewater treatment type percentages are variables.

The CalEEMod default indoor and outdoor water use quantities were used in the analysis.

1.3.9 Solid Waste

GHG emissions are associated with the disposal of solid waste generated by the proposed project into landfills. Solid waste use was based on CalEEMod default values.

Appendix A MODELING RESULTS

LDK Warehouse

Yolo/Solano AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	617.78	1000sqft	14.18	617,780.00	0
Unrefrigerated Warehouse-No Rail	33.70	1000sqft	0.77	33,696.00	0
Unrefrigerated Warehouse-No Rail	93.24	1000sqft	2.14	93,240.00	0
Parking Lot	178.03	1000sqft	4.09	178,030.00	0
Parking Lot	39.08	1000sqft	0.90	39,084.00	0
Parking Lot	10.80	1000sqft	0.25	10,805.00	0
Parking Lot	40.17	1000sqft	0.92	40,170.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Phase length from RFI construction schedule

Off-road Equipment -

Off-road Equipment - Equipment Counts

Off-road Equipment - Equipment counts

Off-road Equipment - Equipment counts

Off-road Equipment - Reset to defaults

Off-road Equipment -

Off-road Equipment - Equipment count per construction

Off-road Equipment -

Trips and VMT - Zeroed out duplicate phase; Number of workers adjusted based on project description

Demolition -

Grading - Parcel total is 50 acres

Vehicle Trips - Changed work trip rate to 1.74 as in DKS traffic study instead of 1.68 (CalEEMod default)

Road Dust - No unpaved road use

Construction Off-road Equipment Mitigation -

Mobile Land Use Mitigation -

Mobile Commute Mitigation -

Area Mitigation -

Energy Mitigation -

Water Mitigation -

Waste Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaMitigation	UseLowVOCPaintParkingCheck	False	True
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10

tblConstructionPhase	NumDays	370.00	160.00
tblConstructionPhase	NumDays	370.00	55.00
tblConstructionPhase	NumDays	370.00	72.00
tblConstructionPhase	NumDays	20.00	90.00
tblConstructionPhase	NumDays	35.00	140.00
tblConstructionPhase	NumDays	10.00	11.00
tblGrading	AcresOfGrading	350.00	50.00
tblGrading	MaterialImported	0.00	10,000.00
tblLandUse	LandUseSquareFeet	33,700.00	33,696.00
tblLandUse	LandUseSquareFeet	10,800.00	10,805.00
tblLandUse	LandUseSquareFeet	39,080.00	39,084.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	4.00	3.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	94	100
tblTripsAndVMT	VendorTripNumber	166.00	0.00
tblTripsAndVMT	WorkerTripNumber	13.00	15.00
tblTripsAndVMT	WorkerTripNumber	13.00	18.00
tblTripsAndVMT	WorkerTripNumber	425.00	110.00
tblTripsAndVMT	WorkerTripNumber	425.00	60.00

tblTripsAndVMT	WorkerTripNumber	425.00	0.00
tblTripsAndVMT	WorkerTripNumber	425.00	100.00
tblVehicleTrips	ST_TR	1.68	1.74
tblVehicleTrips	SU_TR	1.68	1.74
tblVehicleTrips	WD_TR	1.68	1.74

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					
2019	0.4033	4.4262	2.6208	5.2300e-003	3.4006	0.1991	3.5997	0.5050	0.1840	0.6891	0.0000	471.3840	471.3840	0.1276	0.0000	474.5746
2020	0.4170	5.1879	2.9985	0.0112	30.6315	0.1572	30.7887	3.1692	0.1475	3.3166	0.0000	1,027.4704	1,027.4704	0.1195	0.0000	1,030.4584
2021	5.3548	1.3766	0.9208	3.5700e-003	9.3028	0.0379	9.3406	0.9452	0.0357	0.9809	0.0000	327.5351	327.5351	0.0329	0.0000	328.3573
Maximum	**5.3548**	**5.1879**	**2.9985**	**0.0112**	**30.6315**	**0.1991**	**30.7887**	**3.1692**	**0.1840**	**3.3166**	**0.0000**	**1,027.4704**	**1,027.4704**	**0.1276**	**0.0000**	**1,030.4584**

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					
2019	0.4033	4.4262	2.6208	5.2300e-003	0.9270	0.1991	1.1261	0.2339	0.1840	0.4179	0.0000	471.3835	471.3835	0.1276	0.0000	474.5741
2020	0.4170	5.1879	2.9985	0.0112	7.9033	0.1572	8.0605	1.6138	0.1475	1.7613	0.0000	1,027.4700	1,027.4700	0.1195	0.0000	1,030.4580
2021	5.3548	1.3766	0.9208	3.5700e-003	2.3959	0.0379	2.4337	0.4847	0.0357	0.5203	0.0000	327.5350	327.5350	0.0329	0.0000	328.3572
Maximum	**5.3548**	**5.1879**	**2.9985**	**0.0112**	**7.9033**	**0.1991**	**8.0605**	**1.6138**	**0.1840**	**1.7613**	**0.0000**	**1,027.4700**	**1,027.4700**	**0.1276**	**0.0000**	**1,030.4580**

LDK Warehouse - Yolo/Solano AQMD Air District, Annual

	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**	**74.09**	**0.00**	**73.43**	**49.51**	**0.00**	**45.87**	**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)
3	**3-19-2019**	**6-18-2019**	1.0400	1.0400
4	**6-19-2019**	**9-18-2019**	1.4653	1.4653
5	**9-19-2019**	**12-18-2019**	2.0195	2.0195
6	**12-19-2019**	**3-18-2020**	1.7900	1.7900
7	**3-19-2020**	**6-18-2020**	1.3199	1.3199
8	**6-19-2020**	**9-18-2020**	1.3175	1.3175
9	**9-19-2020**	**12-18-2020**	1.3216	1.3216
10	**12-19-2020**	**3-18-2021**	1.1131	1.1131
11	**3-19-2021**	**6-18-2021**	5.7354	5.7354
		Highest	5.7354	5.7354

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	3.4500	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193
Energy	0.0139	0.1267	0.1064	7.6000e-004		9.6300e-003	9.6300e-003		9.6300e-003	9.6300e-003	0.0000	929.9593	929.9593	0.0385	9.9400e-003	933.8823
Mobile	0.5041	3.8168	6.2278	0.0280	2.0824	0.0234	2.1058	0.5606	0.0220	0.5826	0.0000	2,585.9650	2,585.9650	0.1114	0.0000	2,588.7486
Waste						0.0000	0.0000		0.0000	0.0000	142.1018	0.0000	142.1018	8.3980	0.0000	352.0512
Water						0.0000	0.0000		0.0000	0.0000	54.6364	271.0898	325.7261	5.6239	0.1350	506.5664
Total	**3.9681**	**3.9436**	**6.3435**	**0.0288**	**2.0824**	**0.0331**	**2.1155**	**0.5606**	**0.0317**	**0.5923**	**196.7381**	**3,787.0321**	**3,983.7703**	**14.1718**	**0.1450**	**4,381.2678**

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	3.4500	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193
Energy	0.0139	0.1267	0.1064	7.6000e-004		9.6300e-003	9.6300e-003		9.6300e-003	9.6300e-003	0.0000	684.4993	684.4993	0.0274	7.6400e-003	687.4606
Mobile	0.5041	3.8168	6.2278	0.0280	2.0824	0.0234	2.1058	0.5606	0.0220	0.5826	0.0000	2,585.9650	2,585.9650	0.1114	0.0000	2,588.7486
Waste						0.0000	0.0000		0.0000	0.0000	71.0509	0.0000	71.0509	4.1990	0.0000	176.0256
Water						0.0000	0.0000		0.0000	0.0000	54.6364	271.0898	325.7261	5.6239	0.1350	506.5664
Total	**3.9681**	**3.9436**	**6.3435**	**0.0288**	**2.0824**	**0.0331**	**2.1155**	**0.5606**	**0.0317**	**0.5923**	**125.6873**	**3,541.5722**	**3,667.2594**	**9.9617**	**0.1427**	**3,958.8205**

	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**	**36.11**	**6.48**	**7.95**	**29.71**	**1.59**	**9.64**

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	4/1/2019	8/2/2019	5	90	
2	Mobilization/culverts	Site Preparation	8/3/2019	8/19/2019	5	11	
3	Grading	Grading	8/20/2019	3/2/2020	5	140	
4	B1 Building Construction	Building Construction	3/3/2020	10/12/2020	5	160	
5	B2a Building Construction	Building Construction	10/12/2020	12/25/2020	5	55	
6	B2b Building Construction	Building Construction	1/1/2021	4/12/2021	5	72	
7	Paving	Paving	4/13/2021	5/10/2021	5	20	
8	Architectural Coating	Architectural Coating	5/12/2021	6/8/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 50

Acres of Paving: 6.16

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 1,117,074; Non-Residential Outdoor: 372,358; Striped Parking Area: 16,085 (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	2	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Mobilization/culverts	Rubber Tired Dozers	2	8.00	247	0.40
Mobilization/culverts	Tractors/Loaders/Backhoes	3	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
B1 Building Construction	Cranes	1	7.00	231	0.29
B1 Building Construction	Forklifts	2	8.00	89	0.20
B1 Building Construction	Generator Sets	1	8.00	84	0.74
B1 Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
B1 Building Construction	Welders	1	8.00	46	0.45
B2a Building Construction	Cranes	1	7.00	231	0.29
B2a Building Construction	Forklifts	2	8.00	89	0.20
B2a Building Construction	Generator Sets	1	8.00	84	0.74
B2a Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
B2a Building Construction	Welders	1	8.00	46	0.45
B2b Building Construction	Cranes	1	7.00	231	0.29
B2b Building Construction	Forklifts	2	8.00	89	0.20
B2b Building Construction	Generator Sets	1	8.00	84	0.74
B2b Building Construction	Tractors/Loaders/Backhoes	2	7.00	97	0.37
B2b 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	5	15.00	0.00	114.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Mobilization/culverts	5	18.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	1,250.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
B1 Building Construction	7	110.00	166.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
B2a Building Construction	7	60.00	166.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
B2a Building Construction	7	0.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
B2b Building Construction	7	100.00	166.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	85.00	0.00	0.00	15.00	9.00	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Soil Stabilizer

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2019

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					0.0144	0.0000	0.0144	2.1800e-003	0.0000	2.1800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1464	1.4896	0.8459	1.5100e-003		0.0750	0.0750		0.0698	0.0698	0.0000	134.9526	134.9526	0.0368	0.0000	135.8713
Total	**0.1464**	**1.4896**	**0.8459**	**1.5100e-003**	**0.0144**	**0.0750**	**0.0894**	**2.1800e-003**	**0.0698**	**0.0720**	**0.0000**	**134.9526**	**134.9526**	**0.0368**	**0.0000**	**135.8713**

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	5.0000e-004	0.0166	2.6800e-003	5.0000e-005	0.0864	7.0000e-005	0.0865	8.7900e-003	7.0000e-005	8.8500e-003	0.0000	4.4834	4.4834	2.0000e-004	0.0000	4.4883
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	3.4700e-003	2.5700e-003	0.0253	8.0000e-005	0.7664	5.0000e-005	0.7664	0.0777	5.0000e-005	0.0777	0.0000	6.9414	6.9414	1.9000e-004	0.0000	6.9461
Total	**3.9700e-003**	**0.0192**	**0.0279**	**1.3000e-004**	**0.8528**	**1.2000e-004**	**0.8529**	**0.0865**	**1.2000e-004**	**0.0866**	**0.0000**	**11.4248**	**11.4248**	**3.9000e-004**	**0.0000**	**11.4344**

3.2 Demolition - 2019

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					5.6200e-003	0.0000	5.6200e-003	8.5000e-004	0.0000	8.5000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.1464	1.4896	0.8459	1.5100e-003		0.0750	0.0750		0.0698	0.0698	0.0000	134.9525	134.9525	0.0368	0.0000	135.8711
Total	**0.1464**	**1.4896**	**0.8459**	**1.5100e-003**	**5.6200e-003**	**0.0750**	**0.0806**	**8.5000e-004**	**0.0698**	**0.0706**	**0.0000**	**134.9525**	**134.9525**	**0.0368**	**0.0000**	**135.8711**

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	5.0000e-004	0.0166	2.6800e-003	5.0000e-005	0.0223	7.0000e-005	0.0224	4.5100e-003	7.0000e-005	4.5800e-003	0.0000	4.4834	4.4834	2.0000e-004	0.0000	4.4883
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	3.4700e-003	2.5700e-003	0.0253	8.0000e-005	0.1968	5.0000e-005	0.1969	0.0397	5.0000e-005	0.0397	0.0000	6.9414	6.9414	1.9000e-004	0.0000	6.9461
Total	**3.9700e-003**	**0.0192**	**0.0279**	**1.3000e-004**	**0.2191**	**1.2000e-004**	**0.2192**	**0.0442**	**1.2000e-004**	**0.0443**	**0.0000**	**11.4248**	**11.4248**	**3.9000e-004**	**0.0000**	**11.4344**

3.3 Mobilization/culverts - 2019

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					0.0662	0.0000	0.0662	0.0364	0.0000	0.0364	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1714	0.0851	1.5000e-004		9.0500e-003	9.0500e-003		8.3300e-003	8.3300e-003	0.0000	13.0400	13.0400	4.1300e-003	0.0000	13.1432
Total	**0.0163**	**0.1714**	**0.0851**	**1.5000e-004**	**0.0662**	**9.0500e-003**	**0.0753**	**0.0364**	**8.3300e-003**	**0.0447**	**0.0000**	**13.0400**	**13.0400**	**4.1300e-003**	**0.0000**	**13.1432**

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	5.1000e-004	3.8000e-004	3.7100e-003	1.0000e-005	0.1124	1.0000e-005	0.1124	0.0114	1.0000e-005	0.0114	0.0000	1.0181	1.0181	3.0000e-005	0.0000	1.0188
Total	**5.1000e-004**	**3.8000e-004**	**3.7100e-003**	**1.0000e-005**	**0.1124**	**1.0000e-005**	**0.1124**	**0.0114**	**1.0000e-005**	**0.0114**	**0.0000**	**1.0181**	**1.0181**	**3.0000e-005**	**0.0000**	**1.0188**

3.3 Mobilization/culverts - 2019

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					0.0258	0.0000	0.0258	0.0142	0.0000	0.0142	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0163	0.1714	0.0851	1.5000e-004		9.0500e-003	9.0500e-003		8.3300e-003	8.3300e-003	0.0000	13.0400	13.0400	4.1300e-003	0.0000	13.1431
Total	**0.0163**	**0.1714**	**0.0851**	**1.5000e-004**	**0.0258**	**9.0500e-003**	**0.0349**	**0.0142**	**8.3300e-003**	**0.0225**	**0.0000**	**13.0400**	**13.0400**	**4.1300e-003**	**0.0000**	**13.1431**

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	5.1000e-004	3.8000e-004	3.7100e-003	1.0000e-005	0.0289	1.0000e-005	0.0289	5.8200e-003	1.0000e-005	5.8300e-003	0.0000	1.0181	1.0181	3.0000e-005	0.0000	1.0188
Total	**5.1000e-004**	**3.8000e-004**	**3.7100e-003**	**1.0000e-005**	**0.0289**	**1.0000e-005**	**0.0289**	**5.8200e-003**	**1.0000e-005**	**5.8300e-003**	**0.0000**	**1.0181**	**1.0181**	**3.0000e-005**	**0.0000**	**1.0188**

3.4 Grading - 2019

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					0.3180	0.0000	0.3180	0.1621	0.0000	0.1621	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2275	2.6170	1.6021	2.9800e-003		0.1144	0.1144		0.1052	0.1052	0.0000	267.3663	267.3663	0.0846	0.0000	269.4811
Total	**0.2275**	**2.6170**	**1.6021**	**2.9800e-003**	**0.3180**	**0.1144**	**0.4324**	**0.1621**	**0.1052**	**0.2673**	**0.0000**	**267.3663**	**267.3663**	**0.0846**	**0.0000**	**269.4811**

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	3.7600e-003	0.1250	0.0201	3.5000e-004	0.9467	5.2000e-004	0.9473	0.0960	5.0000e-004	0.0965	0.0000	33.7099	33.7099	1.4800e-003	0.0000	33.7470
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	4.9300e-003	3.6500e-003	0.0359	1.1000e-004	1.0900	7.0000e-005	1.0900	0.1104	7.0000e-005	0.1105	0.0000	9.8722	9.8722	2.7000e-004	0.0000	9.8789
Total	**8.6900e-003**	**0.1287**	**0.0561**	**4.6000e-004**	**2.0367**	**5.9000e-004**	**2.0373**	**0.2065**	**5.7000e-004**	**0.2071**	**0.0000**	**43.5821**	**43.5821**	**1.7500e-003**	**0.0000**	**43.6258**

3.4 Grading - 2019

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					0.1240	0.0000	0.1240	0.0632	0.0000	0.0632	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.2275	2.6170	1.6021	2.9800e-003		0.1144	0.1144		0.1052	0.1052	0.0000	267.3660	267.3660	0.0846	0.0000	269.4808
Total	**0.2275**	**2.6170**	**1.6021**	**2.9800e-003**	**0.1240**	**0.1144**	**0.2384**	**0.0632**	**0.1052**	**0.1685**	**0.0000**	**267.3660**	**267.3660**	**0.0846**	**0.0000**	**269.4808**

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	3.7600e-003	0.1250	0.0201	3.5000e-004	0.2436	5.2000e-004	0.2441	0.0492	5.0000e-004	0.0497	0.0000	33.7099	33.7099	1.4800e-003	0.0000	33.7470
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	4.9300e-003	3.6500e-003	0.0359	1.1000e-004	0.2799	7.0000e-005	0.2800	0.0564	7.0000e-005	0.0565	0.0000	9.8722	9.8722	2.7000e-004	0.0000	9.8789
Total	**8.6900e-003**	**0.1287**	**0.0561**	**4.6000e-004**	**0.5235**	**5.9000e-004**	**0.5241**	**0.1056**	**5.7000e-004**	**0.1062**	**0.0000**	**43.5821**	**43.5821**	**1.7500e-003**	**0.0000**	**43.6258**

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					0.1615	0.0000	0.1615	0.0761	0.0000	0.0761	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0979	1.1044	0.7031	1.3600e-003		0.0478	0.0478		0.0440	0.0440	0.0000	119.8655	119.8655	0.0388	0.0000	120.8346
Total	**0.0979**	**1.1044**	**0.7031**	**1.3600e-003**	**0.1615**	**0.0478**	**0.2093**	**0.0761**	**0.0440**	**0.1201**	**0.0000**	**119.8655**	**119.8655**	**0.0388**	**0.0000**	**120.8346**

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	1.5700e-003	0.0531	8.6700e-003	1.6000e-004	0.9458	1.9000e-004	0.9459	0.0957	1.8000e-004	0.0959	0.0000	15.2786	15.2786	6.3000e-004	0.0000	15.2944
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	2.0800e-003	1.4800e-003	0.0148	5.0000e-005	0.4996	3.0000e-005	0.4996	0.0506	3.0000e-005	0.0507	0.0000	4.3823	4.3823	1.1000e-004	0.0000	4.3850
Total	**3.6500e-003**	**0.0546**	**0.0234**	**2.1000e-004**	**1.4453**	**2.2000e-004**	**1.4455**	**0.1463**	**2.1000e-004**	**0.1465**	**0.0000**	**19.6610**	**19.6610**	**7.4000e-004**	**0.0000**	**19.6794**

3.4 Grading - 2020

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					0.0630	0.0000	0.0630	0.0297	0.0000	0.0297	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0979	1.1043	0.7031	1.3600e-003		0.0478	0.0478		0.0440	0.0440	0.0000	119.8653	119.8653	0.0388	0.0000	120.8345
Total	**0.0979**	**1.1043**	**0.7031**	**1.3600e-003**	**0.0630**	**0.0478**	**0.1108**	**0.0297**	**0.0440**	**0.0737**	**0.0000**	**119.8653**	**119.8653**	**0.0388**	**0.0000**	**120.8345**

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	1.5700e-003	0.0531	8.6700e-003	1.6000e-004	0.2426	1.9000e-004	0.2428	0.0488	1.8000e-004	0.0490	0.0000	15.2786	15.2786	6.3000e-004	0.0000	15.2944
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	2.0800e-003	1.4800e-003	0.0148	5.0000e-005	0.1283	3.0000e-005	0.1283	0.0259	3.0000e-005	0.0259	0.0000	4.3823	4.3823	1.1000e-004	0.0000	4.3850
Total	**3.6500e-003**	**0.0546**	**0.0234**	**2.1000e-004**	**0.3709**	**2.2000e-004**	**0.3711**	**0.0747**	**2.1000e-004**	**0.0749**	**0.0000**	**19.6610**	**19.6610**	**7.4000e-004**	**0.0000**	**19.6794**

3.5 B1 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	0.1434	1.2837	1.0939	1.8100e-003		0.0723	0.0723		0.0683	0.0683	0.0000	155.4450	155.4450	0.0356	0.0000	156.3338
Total	**0.1434**	**1.2837**	**1.0939**	**1.8100e-003**		**0.0723**	**0.0723**		**0.0683**	**0.0683**	**0.0000**	**155.4450**	**155.4450**	**0.0356**	**0.0000**	**156.3338**

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	0.0547	1.6884	0.3361	4.5100e-003	9.0666	8.3200e-003	9.0750	0.9245	7.9600e-003	0.9324	0.0000	427.8956	427.8956	0.0221	0.0000	428.4484
Worker	0.0415	0.0296	0.2952	9.7000e-004	9.9914	6.6000e-004	9.9921	1.0124	6.1000e-004	1.0130	0.0000	87.6463	87.6463	2.1300e-003	0.0000	87.6996
Total	**0.0962**	**1.7180**	**0.6313**	**5.4800e-003**	**19.0580**	**8.9800e-003**	**19.0670**	**1.9369**	**8.5700e-003**	**1.9454**	**0.0000**	**515.5420**	**515.5420**	**0.0242**	**0.0000**	**516.1481**

3.5 B1 Building Construction - 2020

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	0.1434	1.2837	1.0939	1.8100e-003		0.0723	0.0723		0.0683	0.0683	0.0000	155.4448	155.4448	0.0356	0.0000	156.3336
Total	**0.1434**	**1.2837**	**1.0939**	**1.8100e-003**		**0.0723**	**0.0723**		**0.0683**	**0.0683**	**0.0000**	**155.4448**	**155.4448**	**0.0356**	**0.0000**	**156.3336**

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	0.0547	1.6884	0.3361	4.5100e-003	2.3434	8.3200e-003	2.3517	0.4761	7.9600e-003	0.4841	0.0000	427.8956	427.8956	0.0221	0.0000	428.4484
Worker	0.0415	0.0296	0.2952	9.7000e-004	2.5661	6.6000e-004	2.5668	0.5173	6.1000e-004	0.5179	0.0000	87.6463	87.6463	2.1300e-003	0.0000	87.6996
Total	**0.0962**	**1.7180**	**0.6313**	**5.4800e-003**	**4.9094**	**8.9800e-003**	**4.9184**	**0.9934**	**8.5700e-003**	**1.0020**	**0.0000**	**515.5420**	**515.5420**	**0.0242**	**0.0000**	**516.1481**

3.6 B2a 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	0.0493	0.4413	0.3760	6.2000e-004		0.0249	0.0249		0.0235	0.0235	0.0000	53.4342	53.4342	0.0122	0.0000	53.7397
Total	**0.0493**	**0.4413**	**0.3760**	**6.2000e-004**		**0.0249**	**0.0249**		**0.0235**	**0.0235**	**0.0000**	**53.4342**	**53.4342**	**0.0122**	**0.0000**	**53.7397**

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	0.0188	0.5804	0.1155	1.5500e-003	6.2224	2.8600e-003	6.2253	0.6313	2.7400e-003	0.6340	0.0000	147.0891	147.0891	7.6000e-003	0.0000	147.2792
Worker	7.7800e-003	5.5500e-003	0.0554	1.8000e-004	3.7443	1.2000e-004	3.7444	0.3787	1.1000e-004	0.3788	0.0000	16.4337	16.4337	4.0000e-004	0.0000	16.4437
Total	**0.0266**	**0.5859**	**0.1709**	**1.7300e-003**	**9.9667**	**2.9800e-003**	**9.9697**	**1.0100**	**2.8500e-003**	**1.0128**	**0.0000**	**163.5228**	**163.5228**	**8.0000e-003**	**0.0000**	**163.7228**

3.6 B2a Building Construction - 2020

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	0.0493	0.4413	0.3760	6.2000e-004		0.0249	0.0249		0.0235	0.0235	0.0000	53.4342	53.4342	0.0122	0.0000	53.7397
Total	**0.0493**	**0.4413**	**0.3760**	**6.2000e-004**		**0.0249**	**0.0249**		**0.0235**	**0.0235**	**0.0000**	**53.4342**	**53.4342**	**0.0122**	**0.0000**	**53.7397**

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	0.0188	0.5804	0.1155	1.5500e-003	1.6001	2.8600e-003	1.6030	0.3231	2.7400e-003	0.3258	0.0000	147.0891	147.0891	7.6000e-003	0.0000	147.2792
Worker	7.7800e-003	5.5500e-003	0.0554	1.8000e-004	0.9598	1.2000e-004	0.9600	0.1930	1.1000e-004	0.1931	0.0000	16.4337	16.4337	4.0000e-004	0.0000	16.4437
Total	**0.0266**	**0.5859**	**0.1709**	**1.7300e-003**	**2.5600**	**2.9800e-003**	**2.5630**	**0.5161**	**2.8500e-003**	**0.5189**	**0.0000**	**163.5228**	**163.5228**	**8.0000e-003**	**0.0000**	**163.7228**

3.7 B2b 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	0.0579	0.5254	0.4835	8.2000e-004		0.0280	0.0280		0.0264	0.0264	0.0000	69.9563	69.9563	0.0158	0.0000	70.3507
Total	**0.0579**	**0.5254**	**0.4835**	**8.2000e-004**		**0.0280**	**0.0280**		**0.0264**	**0.0264**	**0.0000**	**69.9563**	**69.9563**	**0.0158**	**0.0000**	**70.3507**

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	0.0203	0.6929	0.1317	2.0100e-003	4.0800	1.8200e-003	4.0818	0.4160	1.7400e-003	0.4178	0.0000	190.7880	190.7880	9.4600e-003	0.0000	191.0246
Worker	0.0158	0.0108	0.1103	3.8000e-004	4.0874	2.6000e-004	4.0877	0.4142	2.4000e-004	0.4144	0.0000	34.6023	34.6023	7.8000e-004	0.0000	34.6219
Total	**0.0361**	**0.7038**	**0.2420**	**2.3900e-003**	**8.1674**	**2.0800e-003**	**8.1695**	**0.8302**	**1.9800e-003**	**0.8322**	**0.0000**	**225.3903**	**225.3903**	**0.0102**	**0.0000**	**225.6464**

3.7 B2b Building Construction - 2021

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	0.0579	0.5254	0.4835	8.2000e-004		0.0280	0.0280		0.0264	0.0264	0.0000	69.9562	69.9562	0.0158	0.0000	70.3506
Total	**0.0579**	**0.5254**	**0.4835**	**8.2000e-004**		**0.0280**	**0.0280**		**0.0264**	**0.0264**	**0.0000**	**69.9562**	**69.9562**	**0.0158**	**0.0000**	**70.3506**

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	0.0203	0.6929	0.1317	2.0100e-003	1.0545	1.8200e-003	1.0563	0.2143	1.7400e-003	0.2160	0.0000	190.7880	190.7880	9.4600e-003	0.0000	191.0246
Worker	0.0158	0.0108	0.1103	3.8000e-004	1.0498	2.6000e-004	1.0500	0.2116	2.4000e-004	0.2119	0.0000	34.6023	34.6023	7.8000e-004	0.0000	34.6219
Total	**0.0361**	**0.7038**	**0.2420**	**2.3900e-003**	**2.1043**	**2.0800e-003**	**2.1064**	**0.4259**	**1.9800e-003**	**0.4279**	**0.0000**	**225.3903**	**225.3903**	**0.0102**	**0.0000**	**225.6464**

3.8 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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	8.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0206**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

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	6.6000e-004	4.5000e-004	4.6000e-003	2.0000e-005	0.1703	1.0000e-005	0.1703	0.0173	1.0000e-005	0.0173	0.0000	1.4418	1.4418	3.0000e-005	0.0000	1.4426
Total	**6.6000e-004**	**4.5000e-004**	**4.6000e-003**	**2.0000e-005**	**0.1703**	**1.0000e-005**	**0.1703**	**0.0173**	**1.0000e-005**	**0.0173**	**0.0000**	**1.4418**	**1.4418**	**3.0000e-005**	**0.0000**	**1.4426**

3.8 Paving - 2021

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	0.0126	0.1292	0.1465	2.3000e-004		6.7800e-003	6.7800e-003		6.2400e-003	6.2400e-003	0.0000	20.0235	20.0235	6.4800e-003	0.0000	20.1854
Paving	8.0700e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0206**	**0.1292**	**0.1465**	**2.3000e-004**		**6.7800e-003**	**6.7800e-003**		**6.2400e-003**	**6.2400e-003**	**0.0000**	**20.0235**	**20.0235**	**6.4800e-003**	**0.0000**	**20.1854**

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	6.6000e-004	4.5000e-004	4.6000e-003	2.0000e-005	0.0437	1.0000e-005	0.0438	8.8200e-003	1.0000e-005	8.8300e-003	0.0000	1.4418	1.4418	3.0000e-005	0.0000	1.4426
Total	**6.6000e-004**	**4.5000e-004**	**4.6000e-003**	**2.0000e-005**	**0.0437**	**1.0000e-005**	**0.0438**	**8.8200e-003**	**1.0000e-005**	**8.8300e-003**	**0.0000**	**1.4418**	**1.4418**	**3.0000e-005**	**0.0000**	**1.4426**

3.9 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	5.2336					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**5.2357**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

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	3.7300e-003	2.5600e-003	0.0260	9.0000e-005	0.9651	6.0000e-005	0.9651	0.0978	6.0000e-005	0.0979	0.0000	8.1700	8.1700	1.8000e-004	0.0000	8.1746
Total	**3.7300e-003**	**2.5600e-003**	**0.0260**	**9.0000e-005**	**0.9651**	**6.0000e-005**	**0.9651**	**0.0978**	**6.0000e-005**	**0.0979**	**0.0000**	**8.1700**	**8.1700**	**1.8000e-004**	**0.0000**	**8.1746**

3.9 Architectural Coating - 2021

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	5.2336					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.1900e-003	0.0153	0.0182	3.0000e-005		9.4000e-004	9.4000e-004		9.4000e-004	9.4000e-004	0.0000	2.5533	2.5533	1.8000e-004	0.0000	2.5576
Total	**5.2357**	**0.0153**	**0.0182**	**3.0000e-005**		**9.4000e-004**	**9.4000e-004**		**9.4000e-004**	**9.4000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.8000e-004**	**0.0000**	**2.5576**

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	3.7300e-003	2.5600e-003	0.0260	9.0000e-005	0.2479	6.0000e-005	0.2479	0.0500	6.0000e-005	0.0500	0.0000	8.1700	8.1700	1.8000e-004	0.0000	8.1746
Total	**3.7300e-003**	**2.5600e-003**	**0.0260**	**9.0000e-005**	**0.2479**	**6.0000e-005**	**0.2479**	**0.0500**	**6.0000e-005**	**0.0500**	**0.0000**	**8.1700**	**8.1700**	**1.8000e-004**	**0.0000**	**8.1746**

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	0.5041	3.8168	6.2278	0.0280	2.0824	0.0234	2.1058	0.5606	0.0220	0.5826	0.0000	2,585.9650	2,585.9650	0.1114	0.0000	2,588.7486
Unmitigated	0.5041	3.8168	6.2278	0.0280	2.0824	0.0234	2.1058	0.5606	0.0220	0.5826	0.0000	2,585.9650	2,585.9650	0.1114	0.0000	2,588.7486

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1,074.94	1,074.94	1074.94	4,576,593	4,576,593
Unrefrigerated Warehouse-No Rail	58.64	58.64	58.64	249,654	249,654
Unrefrigerated Warehouse-No Rail	162.24	162.24	162.24	690,734	690,734
Total	1,295.81	1,295.81	1,295.81	5,516,980	5,516,980

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
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	15.00	8.00	9.00	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	15.00	8.00	9.00	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	15.00	8.00	9.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.523474	0.037926	0.194068	0.114815	0.021291	0.005457	0.036110	0.054974	0.001332	0.002002	0.006933	0.000689	0.000929
Unrefrigerated Warehouse-No Rail	0.523474	0.037926	0.194068	0.114815	0.021291	0.005457	0.036110	0.054974	0.001332	0.002002	0.006933	0.000689	0.000929

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Install High Efficiency Lighting

LDK Warehouse - Yolo/Solano AQMD Air District, Annual

	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	546.5985	546.5985	0.0247	5.1100e-003	548.7402
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	792.0584	792.0584	0.0358	7.4100e-003	795.1620
NaturalGas Mitigated	0.0139	0.1267	0.1064	7.6000e-004		9.6300e-003	9.6300e-003		9.6300e-003	9.6300e-003	0.0000	137.9009	137.9009	2.6400e-003	2.5300e-003	138.7203
NaturalGas Unmitigated	0.0139	0.1267	0.1064	7.6000e-004		9.6300e-003	9.6300e-003		9.6300e-003	9.6300e-003	0.0000	137.9009	137.9009	2.6400e-003	2.5300e-003	138.7203

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					
Parking Lot	0	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
Unrefrigerated Warehouse-No Rail	116925	6.3000e-004	5.7300e-003	4.8100e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.2396	6.2396	1.2000e-004	1.1000e-004	6.2767
Unrefrigerated Warehouse-No Rail	2.1437e+006	0.0116	0.1051	0.0883	6.3000e-004		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	114.3958	114.3958	2.1900e-003	2.1000e-003	115.0756
Unrefrigerated Warehouse-No Rail	323543	1.7400e-003	0.0159	0.0133	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.2655	17.2655	3.3000e-004	3.2000e-004	17.3681
Total		**0.0139**	**0.1267**	**0.1064**	**7.6000e-004**		**9.6400e-003**	**9.6400e-003**		**9.6400e-003**	**9.6400e-003**	**0.0000**	**137.9009**	**137.9009**	**2.6400e-003**	**2.5300e-003**	**138.7203**

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					
Parking Lot	0	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
Unrefrigerated Warehouse-No Rail	323543	1.7400e-003	0.0159	0.0133	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.2655	17.2655	3.3000e-004	3.2000e-004	17.3681
Unrefrigerated Warehouse-No Rail	116925	6.3000e-004	5.7300e-003	4.8100e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.2396	6.2396	1.2000e-004	1.1000e-004	6.2767
Unrefrigerated Warehouse-No Rail	2.1437e+006	0.0116	0.1051	0.0883	6.3000e-004		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	114.3958	114.3958	2.1900e-003	2.1000e-003	115.0756
Total		**0.0139**	**0.1267**	**0.1064**	**7.6000e-004**		**9.6400e-003**	**9.6400e-003**		**9.6400e-003**	**9.6400e-003**	**0.0000**	**137.9009**	**137.9009**	**2.6400e-003**	**2.5300e-003**	**138.7203**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	13679.4	3.9795	1.8000e-004	4.0000e-005	3.9951
Parking Lot	14059.5	4.0901	1.8000e-004	4.0000e-005	4.1061
Parking Lot	3781.75	1.1002	5.0000e-005	1.0000e-005	1.1045
Parking Lot	62310.5	18.1268	8.2000e-004	1.7000e-004	18.1979
Unrefrigerated Warehouse-No Rail	118947	34.6030	1.5600e-003	3.2000e-004	34.7386
Unrefrigerated Warehouse-No Rail	2.18076e+006	634.4091	0.0287	5.9400e-003	636.8949
Unrefrigerated Warehouse-No Rail	329137	95.7498	4.3300e-003	9.0000e-004	96.1250
Total		**792.0584**	**0.0358**	**7.4200e-003**	**795.1620**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	1890.87	0.5501	2.0000e-005	1.0000e-005	0.5522
Parking Lot	31155.2	9.0634	4.1000e-004	8.0000e-005	9.0989
Parking Lot	6839.7	1.9898	9.0000e-005	2.0000e-005	1.9975
Parking Lot	7029.75	2.0450	9.0000e-005	2.0000e-005	2.0531
Unrefrigerated Warehouse-No Rail	1.51974e+006	442.1094	0.0200	4.1400e-003	443.8418
Unrefrigerated Warehouse-No Rail	229370	66.7265	3.0200e-003	6.2000e-004	66.9879
Unrefrigerated Warehouse-No Rail	82892.2	24.1143	1.0900e-003	2.3000e-004	24.2088
Total		**546.5985**	**0.0247**	**5.1200e-003**	**548.7402**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	3.4500	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193
Unmitigated	3.4500	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193

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	0.5234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9258					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.7000e-004	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193
Total	**3.4501**	**9.0000e-005**	**9.3200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**5.0000e-005**	**0.0000**	**0.0193**

6.2 Area by SubCategory

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	0.5234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9258					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.7000e-004	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193
Total	**3.4501**	**9.0000e-005**	**9.3200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**5.0000e-005**	**0.0000**	**0.0193**

7.0 Water Detail

7.1 Mitigation Measures Water

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	325.7261	5.6239	0.1350	506.5664
Unmitigated	325.7261	5.6239	0.1350	506.5664

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	172.217 / 0	325.7261	5.6239	0.1350	506.5664
Total		**325.7261**	**5.6239**	**0.1350**	**506.5664**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	172.217 / 0	325.7261	5.6239	0.1350	506.5664
Total		**325.7261**	**5.6239**	**0.1350**	**506.5664**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	71.0509	4.1990	0.0000	176.0256
Unmitigated	142.1018	8.3980	0.0000	352.0512

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	700.04	142.1018	8.3980	0.0000	352.0512
Total		**142.1018**	**8.3980**	**0.0000**	**352.0512**

8.2 Waste by Land Use

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	350.02	71.0509	4.1990	0.0000	176.0256
Total		**71.0509**	**4.1990**	**0.0000**	**176.0256**

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

Stantec

Technical Memorandum

To:	Peyman Behvand, City of Vacaville	From:	Stantec Consulting Services Inc. 1340 Treat Boulevard, Suite 300 Walnut Creek, CA 94597-7966
File:	LDK Warehouse Project	Date:	September 19, 2018

Reference: LDK Warehouse Project Initial Study Health Risk Assessment

EXECUTIVE SUMMARY

The proposed project was evaluated using the latest version of EPA's AERMOD dispersion model, California Air Resources Board's HARP2 and EMFAC2017 programs. The health risk assessment (HRA) followed both EPA's and OEHHA's 2015 guidance document for preparing HRA's. The cancer risk from emissions of diesel exhaust to the nearest residential receptor located north of the proposed project was 4.67 in one million over a 30-year period and 5.49 in one million over a 70-year period, see Figures 3 & 4. Currently, the Lead Agency does not have a carcinogenic threshold for determining if a project is significant. Therefore, in order to determine if the risk posed by the project is significant, it was compared to the most commonly used and conservative risk threshold of 10 in one million for both the 30-year and 70-year exposure period. Using this threshold, the proposed project would not be considered significant.

SUPPORTING INFORMATION

The following summarizes the results of the HRA performed for the proposed LDK Warehouse project. The HRA was conducted in support of the Initial Study to ensure that no significant effects to nearby residential receptors would occur. The Lead Agency for the project is the City of Vacaville (City). The City has discretionary authority over the proposed project.

The proposed project is in northwest Vacaville, west of Interstate-505 (I-505) in the City's Interchange Business Park Policy Plan area. The proposed project would be located on Assessor Parcel Number (APN) 106-240-340 and APN 106-240-350 (Figure 1), south of Midway Road and north of the former SaveMart Distribution Center.

The project emissions consist of truck travel within the project boundary, travel on the HWY, and idling emissions. Truck travel was modeled as a series of line volume sources and truck idling was modeled as point sources. Figure 2 provides a layout of all the sources modeled. Appendix A provides the emissions estimation methodology used for estimating the emissions used in the HARP2 program.

Due to the length of the files, all inputs and outputs used to develop the final risk estimate will be provided upon request via a separate zip file.

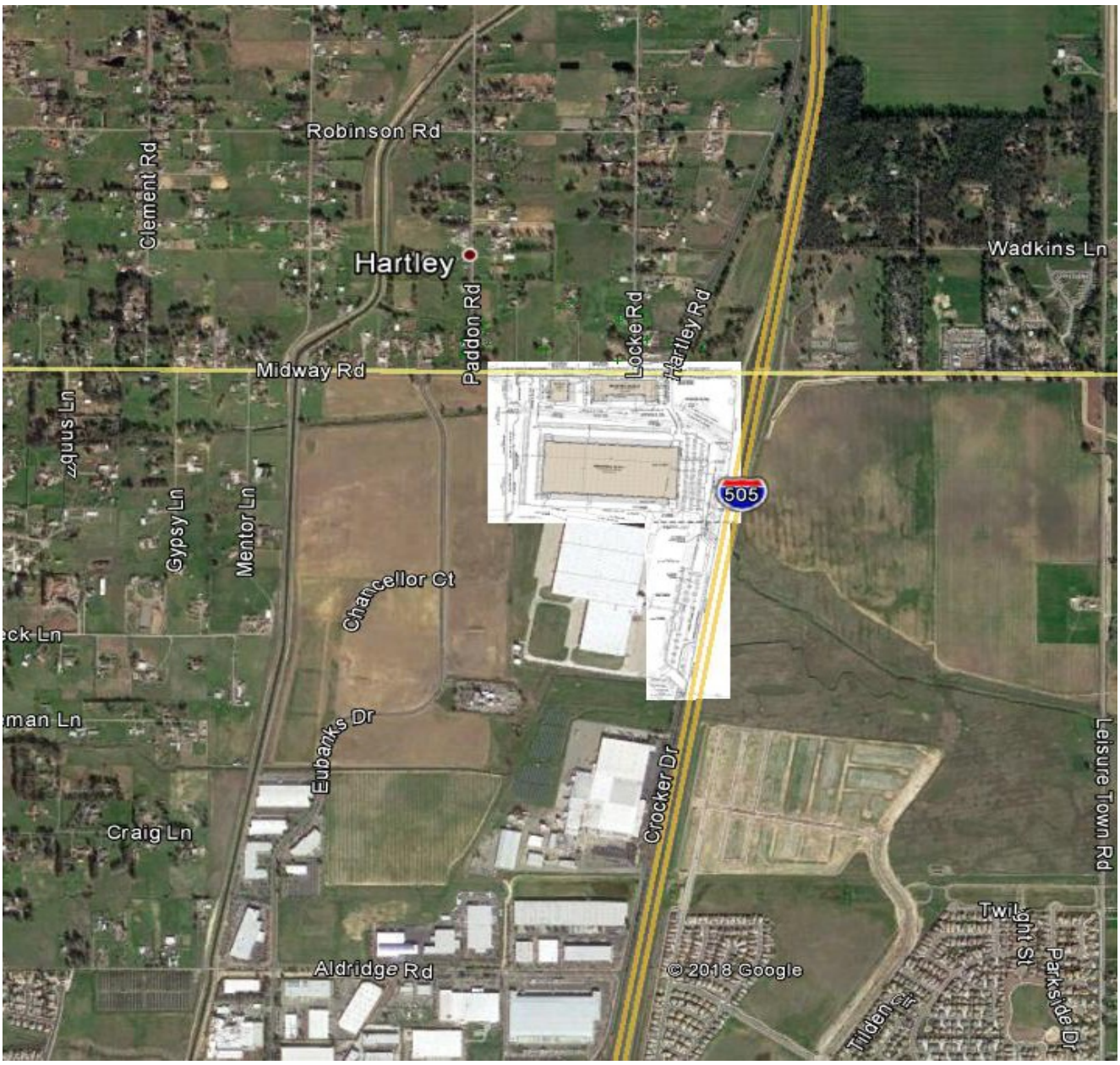

Figure 1 - Project Location

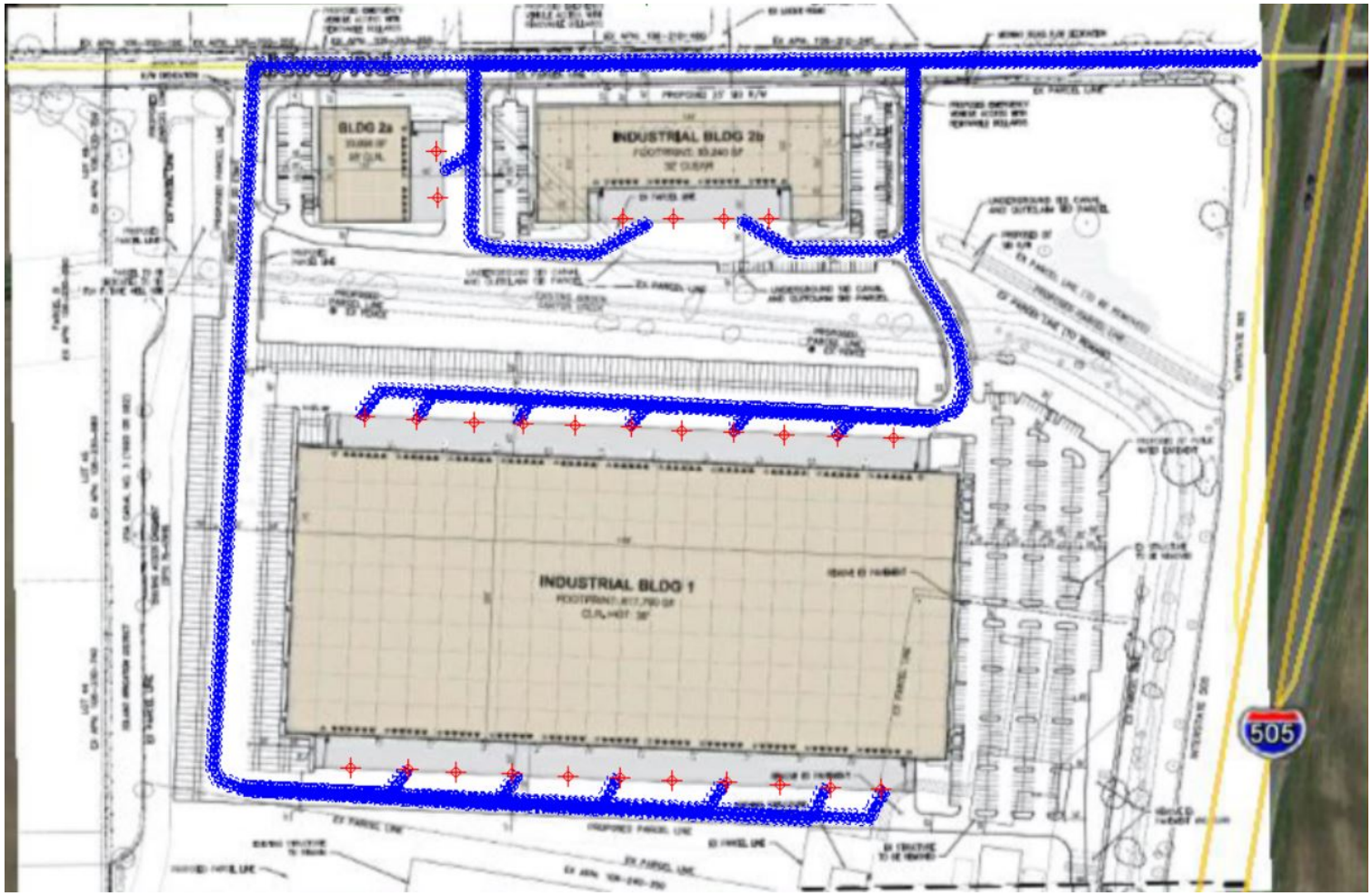

Figure 2 - Project Emission Sources

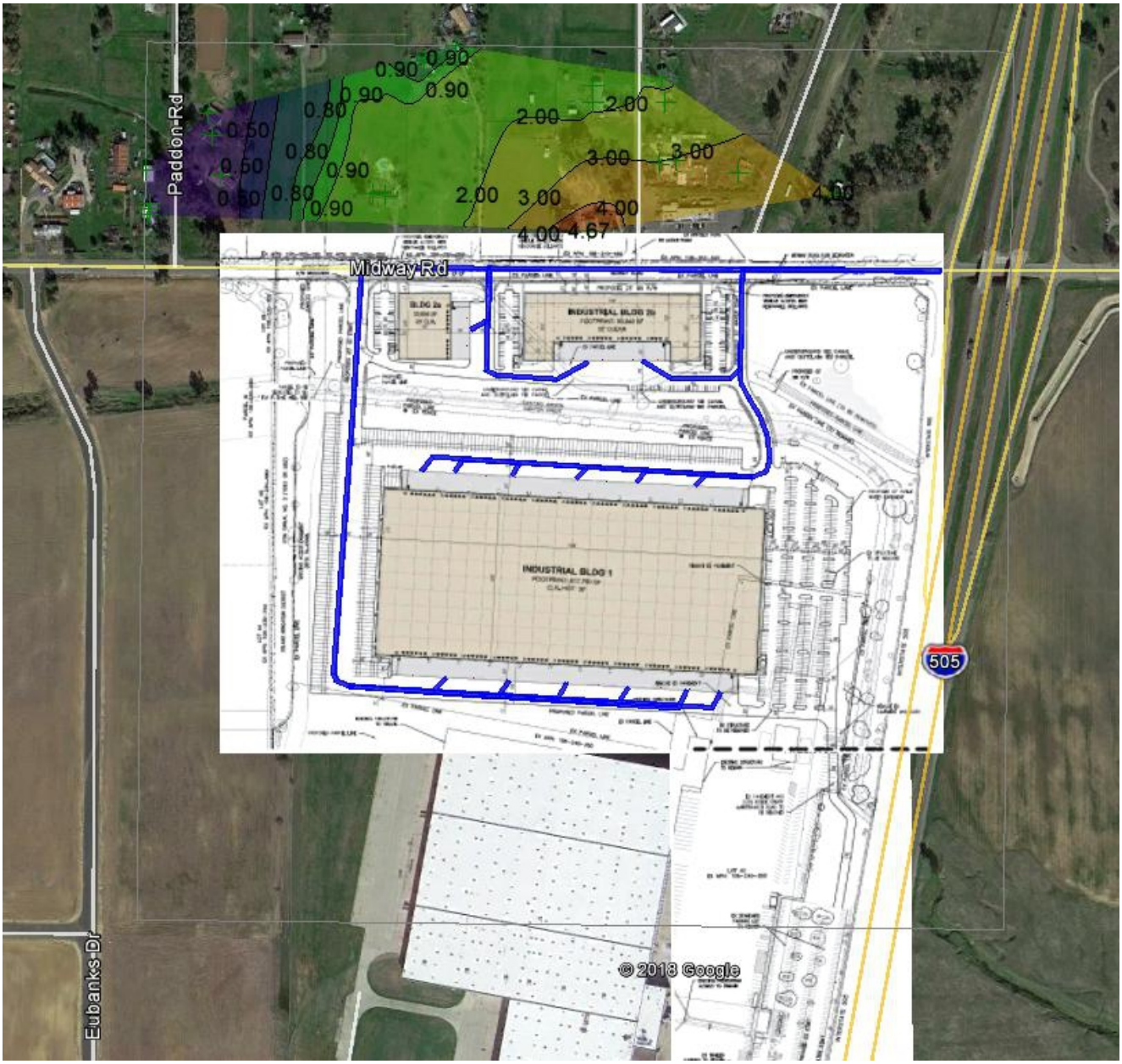

Figure 3 - 30 Year Cancer Risk (in a million)

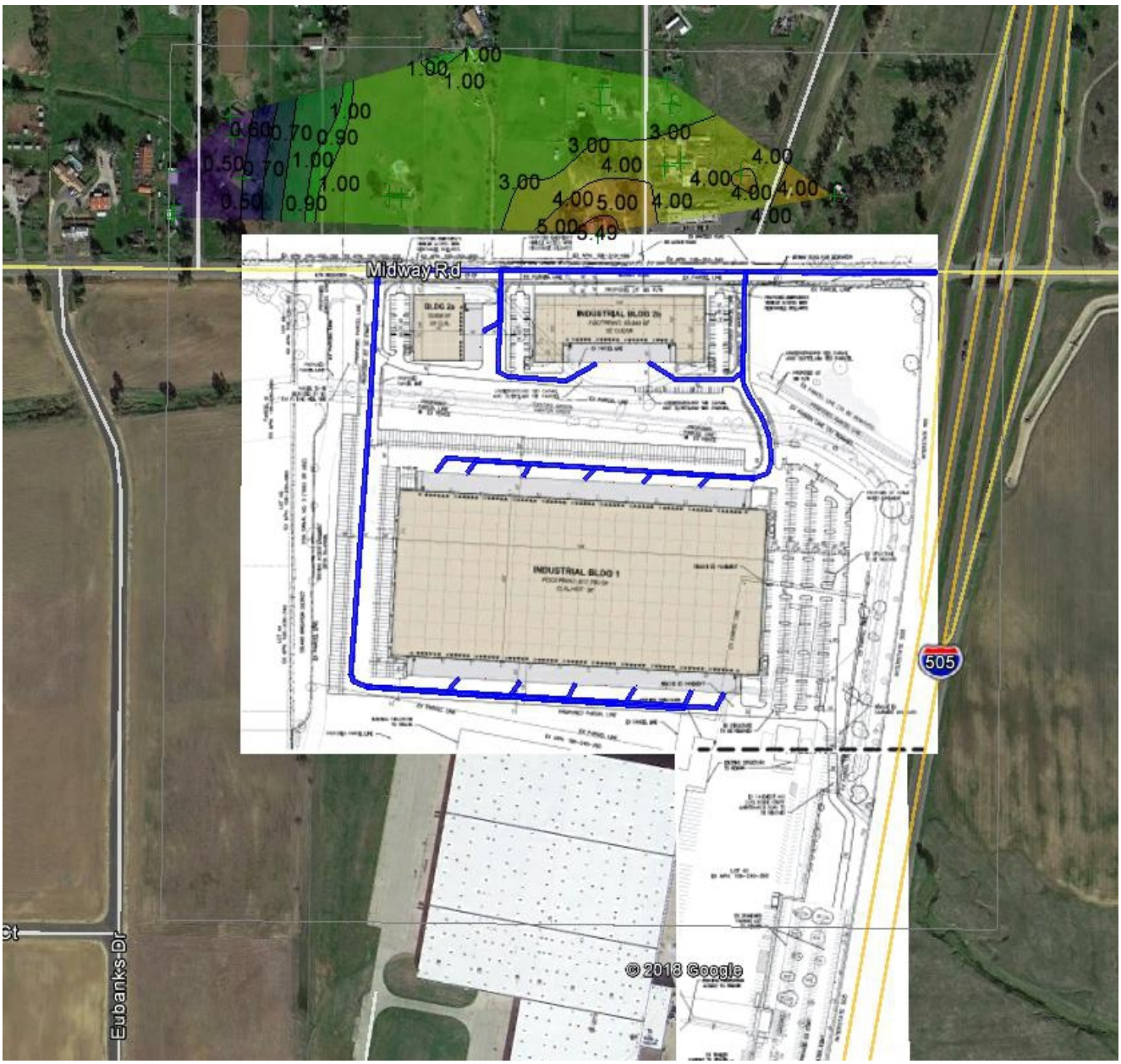

Figure 4 - 70 Year Cancer Risk (in a million)

APPENDIX A
EMISSIONS ESTIMATION METHODOLOGY

Table 1: Project Parameters

Model ID	Building ID	# of Docks	Max Daily Truck Trips	# Idling Pts.
B1	Industrial bldg 1	122	92	22
2A	Industrial bldg 2A	10	8	2
2B	Industrial bldg 2B	24	18	4

* 118 daily trucks based on CalEEMod default for Yolo Solano Air Quality Management District

Table 2: Number of Trucks per Modeled Source

Modeling ID	Building ID	Onsite Travel Distance (m)	Onsite Travel Distance (mi)	Offsite Travel Distance (m)	Offsite Travel Distance (mi)	% of Trucks
B1_1_N	Industrial bldg 1	172.1	0.11	0	0.00	8.33%
B1_2_N	Industrial bldg 1	114.7	0.07	0	0.00	8.33%
B1_3_N	Industrial bldg 1	57.7	0.04	0	0.00	8.33%
B1_4_N	Industrial bldg 1	235.8	0.15	0	0.00	8.33%
B1_5_N	Industrial bldg 1	290.1	0.18	0	0.00	8.33%
B1_6_N	Industrial bldg 1	320.1	0.20	0	0.00	8.33%
B1_E	Industrial bldg 1	213.1	0.13	0	0.00	50.00%
B1_E_HWY	Industrial bldg 1	0	0.00	188	0.12	50.00%
B1_1_S	Industrial bldg 1	93.3	0.06	0	0.00	8.33%
B1_2_S	Industrial bldg 1	159.1	0.10	0	0.00	8.33%
B1_3_S	Industrial bldg 1	216	0.13	0	0.00	8.33%
B1_4_S	Industrial bldg 1	273.3	0.17	0	0.00	8.33%
B1_5_S	Industrial bldg 1	332.2	0.21	0	0.00	8.33%
B1_6_S	Industrial bldg 1	362.3	0.23	0	0.00	8.33%
B1_S	Industrial bldg 1	406.2	0.25	0	0.00	50.00%
B1_S_HWY	Industrial bldg 1	0	0.00	551.4	0.34	50.00%
2A	Industrial bldg 2A	68	0.04	0	0.00	100.00%
2A_HWY	Industrial bldg 2A	0	0.00	430.6	0.27	100.00%
2B_E	Industrial bldg 2B	195.5	0.12	0	0.00	50.00%
2B_E_HWY	Industrial bldg 2B	0	0.00	188.4	0.12	50.00%
2B_W	Industrial bldg 2B	198.9	0.12	0	0.00	50.00%
2B_W_HWY	Industrial bldg 2B	0	0.00	429.3	0.27	50.00%

- Distance in meters are from AERMOD modeling inputs
- % of Trucks = ([# of Docks]/[# of Modeled Source])/[# of Docks]

Table 3: Maximum Diesel Particulate Matter Travel Emission Estimate per Modeled Source

Modeling ID	Building ID	Onsite Travel Distance		Offsite Travel Distance		Total Annual Emissions
		Lbs/Day	Lbs/Yr	Lbs/Day	Lbs/Yr	
B1_1_N	Industrial bldg 1	0.0003	0.11	0.000	0.00	0.11
B1_2_N	Industrial bldg 1	0.0002	0.07	0.000	0.00	0.07
B1_3_N	Industrial bldg 1	0.0001	0.04	0.000	0.00	0.04
B1_4_N	Industrial bldg 1	0.0004	0.15	0.000	0.00	0.15
B1_5_N	Industrial bldg 1	0.0005	0.19	0.000	0.00	0.19
B1_6_N	Industrial bldg 1	0.0006	0.21	0.000	0.00	0.21
B1_E	Industrial bldg 1	0.0023	0.84	0.000	0.00	0.84
B1_E_HWY	Industrial bldg 1	0.0000	0.00	0.001	0.50	0.50
B1_1_S	Industrial bldg 1	0.0002	0.06	0.000	0.00	0.06
B1_2_S	Industrial bldg 1	0.0003	0.10	0.000	0.00	0.10
B1_3_S	Industrial bldg 1	0.0004	0.14	0.000	0.00	0.14
B1_4_S	Industrial bldg 1	0.0005	0.18	0.000	0.00	0.18
B1_5_S	Industrial bldg 1	0.0006	0.22	0.000	0.00	0.22
B1_6_S	Industrial bldg 1	0.0006	0.24	0.000	0.00	0.24
B1_S	Industrial bldg 1	0.0044	1.59	0.000	0.00	1.59
B1_S_HWY	Industrial bldg 1	0.0000	0.00	0.0040	1.46	1.46
2A	Industrial bldg 2A	0.0001	0.04	0.000	0.00	0.04
2A_HWY	Industrial bldg 2A	0.0000	0.00	0.001	0.19	0.19
2B_E	Industrial bldg 2B	0.0004	0.15	0.000	0.00	0.15
2B_E_HWY	Industrial bldg 2B	0.0000	0.00	0.000	0.10	0.10
2B_W	Industrial bldg 2B	0.0004	0.15	0.000	0.00	0.15
2B_W_HWY	Industrial bldg 2B	0.0000	0.00	0.001	0.22	0.22
Maximum Emissions Totals		0.012	4.49	0.007	2.46	6.96

- Lbs/Day = [EMFAC2017 2020 EF g/mi]*[Miles Modeled]*[Max Daily Truck Trips]*[% of Trucks]
- Lbs/Yr = Lbs/Day *365 Days/Yr

Table 4 - Maximum Idling DPM Emission Estimate per Modeled Source

Model ID	Building ID	Idling Time (hrs)	Lbs/Day	Lbs/Yr
STCK7-28	Industrial bldg 1	0.25	0.003	0.95
STCK1-2	Industrial bldg 2A		0.002	0.86
STCK3-6	Industrial bldg 2B		0.003	1.03

- Idling Time = 15min / 60 min
- Lbs/Day = ([Idling Time]*[EMFAC2017 Idling EF g/Hr]*453.6*[Daily Truck Trips])/[# Idling pts]
- Lbs/Yr = [Lbs/day]*365

Table 5 – Emissions Scalars

Area	Scen Year	HR	Gasoline VMT	Diesel VMT	Scalar Gasoline	Scalar Diesel
Solano	2020	1	54	24	0.13	0.65
Solano	2020	2	17	15	0.04	0.41
Solano	2020	3	17	23	0.04	0.64
Solano	2020	4	8	30	0.02	0.81
Solano	2020	5	23	18	0.05	0.50
Solano	2020	6	42	23	0.10	0.64
Solano	2020	7	190	36	0.44	0.97
Solano	2020	8	404	32	0.94	0.88
Solano	2020	9	367	34	0.86	0.92
Solano	2020	10	220	36	0.51	0.99
Solano	2020	11	237	36	0.55	0.99
Solano	2020	12	301	37	0.70	**1.00**
Solano	2020	13	315	32	0.74	0.88
Solano	2020	14	310	33	0.72	0.91
Solano	2020	15	363	26	0.85	0.71
Solano	2020	16	373	19	0.87	0.52
Solano	2020	17	384	25	0.89	0.68
Solano	2020	18	429	19	**1.00**	0.52
Solano	2020	19	298	18	0.70	0.50
Solano	2020	20	225	9	0.53	0.23
Solano	2020	21	167	20	0.39	0.53
Solano	2020	22	167	19	0.39	0.51
Solano	2020	23	126	11	0.29	0.31
Solano	2020	24	98	8	0.23	0.22
	Totals		5,135	583	11.98	15.92
	Max Values		429	37		

Table 6: EMFAC2017 (v1.0.2) Emission Rates

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	PM10_RUNEX
Solano (SV)	2020	HHDT	Aggregated	5	DSL	7151.81933	0.170547149
Solano (SV)	2020	HHDT	Aggregated	10	DSL	9509.198206	0.10953614
Solano (SV)	2020	HHDT	Aggregated	15	DSL	7112.972895	0.063918987
Solano (SV)	2020	HHDT	Aggregated	20	DSL	10505.05188	0.051415567
Solano (SV)	2020	HHDT	Aggregated	25	DSL	9167.726494	0.042163234
Solano (SV)	2020	HHDT	Aggregated	30	DSL	7068.855726	0.046841649
Solano (SV)	2020	HHDT	Aggregated	35	DSL	8828.615403	0.043824219
Solano (SV)	2020	HHDT	Aggregated	40	DSL	9294.165823	0.046708061
Solano (SV)	2020	HHDT	Aggregated	45	DSL	11473.76013	0.049441143
Solano (SV)	2020	HHDT	Aggregated	50	DSL	15829.34815	0.055582911
Solano (SV)	2020	HHDT	Aggregated	55	DSL	33866.34874	0.063456266
Solano (SV)	2020	HHDT	Aggregated	60	DSL	113220.5916	0.069505659
Solano (SV)	2020	HHDT	Aggregated	65	DSL	159682.6757	0.066746882
Solano (SV)	2020	HHDT	Aggregated	70	DSL	8798.824985	0.096721186
Solano (SV)	2020	HHDT	Aggregated	75	DSL	1093.761984	0.106689119
Solano (SV)	2020	HHDT	Aggregated	80	DSL	0	0
Solano (SV)	2020	HHDT	Aggregated	85	DSL	0	0
Solano (SV)	2020	HHDT	Aggregated	90	DSL	0	0
Solano (SV)	2020	MHDT	Aggregated	5	DSL	1928.792422	0.280828957
Solano (SV)	2020	MHDT	Aggregated	10	DSL	1864.792669	0.232005555
Solano (SV)	2020	MHDT	Aggregated	15	DSL	1109.518577	0.162525879
Solano (SV)	2020	MHDT	Aggregated	20	DSL	1284.769907	0.119433119
Solano (SV)	2020	MHDT	Aggregated	25	DSL	1749.806444	0.10210153

Table 6: EMFAC2017 (v1.0.2) Emission Rates – Continued

Region	Calendar Year	Vehicle Category	Model Year	Speed	Fuel	VMT	PM10_RUNEX
Solano (SV)	2020	MHDT	Aggregated	30	DSL	2165.887858	0.093509074
Solano (SV)	2020	MHDT	Aggregated	35	DSL	2046.418722	0.087018567
Solano (SV)	2020	MHDT	Aggregated	40	DSL	1631.043376	0.083798405
Solano (SV)	2020	MHDT	Aggregated	45	DSL	1546.432147	0.08654278
Solano (SV)	2020	MHDT	Aggregated	50	DSL	2271.503543	0.100563049
Solano (SV)	2020	MHDT	Aggregated	55	DSL	4453.773326	0.117980516
Solano (SV)	2020	MHDT	Aggregated	60	DSL	6073.175897	0.118327699
Solano (SV)	2020	MHDT	Aggregated	65	DSL	3802.811814	0.103884152
Solano (SV)	2020	MHDT	Aggregated	70	DSL	381.1529741	0.119510452
Solano (SV)	2020	MHDT	Aggregated	75	DSL	175.8730349	0.121297165
Solano (SV)	2020	MHDT	Aggregated	80	DSL	0	0
Solano (SV)	2020	MHDT	Aggregated	85	DSL	0	0
Solano (SV)	2020	MHDT	Aggregated	90	DSL	0	0
Idling Emission Factor (g/Hr)							1.128440264
Average Surface Traveling Emission Factor (g/mi) 5-35 MPH							0.114690688
Average Onsite Traveling Emission Factor (g/mi) 5-15 MPH							0.169893778

Notes:
Region Type: Sub-Area
Region: Solano (SV)
Calendar Year: 2020
Season: Annual
Vehicle Classification: EMFAC 2007 Categories

Appendix B GHG THRESHOLD DEVELOPMENT

LDK WAREHOUSE – GREENHOUSE GAS THRESHOLD DEVELOPMENT

BACKGROUND

The City of Vacaville has an adopted Energy & Conservation Action Strategy (ECAS) Plan (August 2015) that was created for the City to follow State requirements that address the reduction of major sources of greenhouse gas (GHG) emissions. The ECAS established a strategy that the can be implemented by the City and the community to achieve the City's GHG emission reduction target, as identified and required by State legislation.

The ECAS identified a 21.7 percent reduction from Business-as-Usual (BAU) emission in 2020 to be consistent with the reduction target established by Assembly Bill (AB) 32, which is to limit California's GHG emissions to 1990 levels by the year 2020.

The BAU forecast refers to a scenario in which neither California nor the US government adopts any measures to reduce GHG emissions.

Since the adoption of the ECAS, the State has adopted a new scoping plan to be consistent with Senate Bill (SB) 32, which identified a new GHG reduction target of 40 percent below 1990 levels by 2030.

Additionally, the California Supreme Court's decision in *Center for Biological Diversity v. California Department of Fish and Wildlife and Newhall Land and Farm (2015) 224 Cal.App4th 1105 (CBD v. CDFW)* also known as the "*Newhall Ranch case*" clarified that substantial evidence needs to be provided to document that project-level reductions in comparison to a BAU approach would be consistent achieving AB 32's overall statewide reduction goal.

The Court identified potential options for evaluating GHG impacts for individual development projects, which included the use of GHG efficiency metrics. In general, GHG efficiency metrics can be used to assess the GHG efficiency of an individual project based on a per capita basis or on a service population basis.

A GHG efficiency threshold based on service population can be calculated by dividing the GHG emissions inventory goal (allowable emissions), by the estimated service population of the individual project.

Most recently, the Supreme Court addressed the need to consider GHG reduction thresholds post-2020 in the *Cleveland National Forest Foundation v. San Diego Association of Governments (CNFF v. SANDAG)*.

Most of the Vacaville city limits are within the Yolo-Solano Air Quality Management District (YSAQMD) and a small part of the city limits are within the Bay Area Air Quality Management District (BAAQMD). The YSAQMD does not yet have its own GHG standards; however, the BAAQMD has a regional Climate Protection Program with measures to help meet GHG reductions. The YSAQMD has allowed projects to use the BAAQMD GHG emissions thresholds while the YSAQMD develops its own GHG standards and criteria. Notably, the BAAQMD GHG

standards are based on AB 32 reduction targets to achieve 2020 emission limits. BAAQMD is in the process of updating its GHG thresholds.

Thresholds

LDK's project operational emissions exceed BAAQMD's bright-line screening threshold, therefore, further analysis is required to determine if the project would have a significant impact. Although there is no known level of emissions that determines if a single project will substantially impact overall GHG emission levels in the atmosphere, a threshold must be set to trigger a review and assessment of the need to mitigate project GHG emissions.

The proposed project-specific threshold for LDK is based on a comparison of GHG efficiency for the State to achieve SB 32 emission targets and applying that percent reduction to the City of Vacaville's projected 2020 emissions to arrive at the proposed 2021 efficiency threshold (the year that the project will become operational).

Table 1: State Efficiency Threshold Needed to Achieve SB 32 Reduction Targets

Year	GHG Target $MMTCO_2e$	Population	Employment	Total Population +Employment	GHG Efficiency Threshold ($MTCO_2e/sp$)
2020	196	40,639,392	19824000	60,463,392	3.24
2021	190.5	40980939	19,990,000	60,970,939	3.12
2030	141	43939250	20908816	64,848,066	2.17

$MMCO_2e$= Million Metric Tons Carbon Dioxide Equivalents
Service population (sp) = population
Sources:
1. California Department of Finance Employment Development Department. Industry Employment Projections Labor Market Information Division 2010-2020 (Published 5/23/2012) and 2012-2022 (Published 9/19/2014)
2. California Department of Finance Demographic Research Unit Report P-1 " Total Estimated and Projected Population for California and Counties: July 1, 2010 to July 1, 2060 in 1-year Increments" (as of July 1). Published 12/15/2014.
3. California Air Resources Board, California's 2017 Climate Change Scoping Plan, November 2017.

As shown in Table 1 above, the GHG efficiency threshold is reduced by 33-percent to achieve the required 2030 GHG reduction target of 141 $MMTCO_2e$.

LDK WAREHOUSE – GREENHOUSE GAS THRESHOLD DEVELOPMENT

As shown in Table 2, the City of Vacaville's calculated efficiency threshold for 2020 based on the ECAS Table 3.3 projected emissions for project sources is 5.81 $MTCO_2e$/service population.

Table 2: City of Vacaville Projected 2020 GHG Efficiency Threshold

Source	2020 Adjusted GHG Emissions MTCO2e/Year	Total	Population	GHG Efficiency Threshold ($MTCO_2e$/sp)
Transportation	639,790	766,660	132,040	5.81
Non-residential	126,870			

$MTCO_2e$ = Metric Tons Carbon Dioxide Equivalent

Service population (sp) = population

Sources:

City of Vacaville, Energy and Conservation Action Strategy, 2015, Table 3-1: Existing and 2020 Population, Employment, and Housing Projections and Table 3-3 Baseline Year 2008 and Adjusted Forecast Year 2020 Communitywide Greenhouse Gas Emissions Summary

By applying the same 33 percent reduction (from the Statewide GHG efficiency threshold to achieve the 2030 target) to the City of Vacaville's 5.81 GHG efficiency threshold for 2020 the result is a reduction of 0.19 MTCO2e/sp on an annual basis to achieve 3.89 MTCO2e/sp in the year 2030.

Because the project will become operational in the year 2022, a GHG efficiency threshold was interpolated for that project year as shown in Table 3. The project-specific GHG threshold for the LDK Warehouse project is 5.43 $MTCO_2e$/sp.

Table 3: Project-Specific GHG Efficiency Threshold

Year	GHG Efficiency Threshold ($MTCO_2e$/sp)
2020	5.81
2021	5.62
2022	**5.43**
2023	5.23
2024	5.04
2025	4.85
2026	4.66
2027	4.47
2028	4.27
2029	4.08
2030	3.89

Bold = project-specific threshold

LDK WAREHOUSE – GREENHOUSE GAS THRESHOLD DEVELOPMENT

The estimated number of employees was 450, however the number of vehicle trips was 1,296 per day. Assuming the total trips per day includes some vendor or customer trips the total number of people served would be 1,296 divided by two or 648. The service population for the project is therefore defined as 648.

To have a less than significant impact, the project must achieve a GHG efficiency threshold of 5.43 $MTCO_2e$/sp.

Attachments: CalEEMod GHG Results

LDK Warehouse

Yolo/Solano AQMD Air District, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	617.78	1000sqft	14.18	617,780.00	0
Unrefrigerated Warehouse-No Rail	33.70	1000sqft	0.77	33,696.00	0
Unrefrigerated Warehouse-No Rail	93.24	1000sqft	2.14	93,240.00	0
Parking Lot	178.03	1000sqft	4.09	178,030.00	0
Parking Lot	39.08	1000sqft	0.90	39,084.00	0
Parking Lot	10.80	1000sqft	0.25	10,805.00	0
Parking Lot	40.17	1000sqft	0.92	40,170.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	6.8	**Precipitation Freq (Days)**	55
Climate Zone	4			**Operational Year**	2022
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Table Name	Column Name	Default Value	New Value
tblVehicleTrips	ST_TR	1.68	1.74
tblVehicleTrips	SU_TR	1.68	1.74
tblVehicleTrips	WD_TR	1.68	1.74

2.0 Emissions Summary

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	3.4500	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193
Energy	0.0139	0.1267	0.1064	7.6000e-004		9.6300e-003	9.6300e-003		9.6300e-003	9.6300e-003	0.0000	929.9593	929.9593	0.0385	9.9400e-003	933.8823
Mobile	0.5041	3.8168	6.2278	0.0280	2.0824	0.0234	2.1058	0.5606	0.0220	0.5826	0.0000	2,585.9650	2,585.9650	0.1114	0.0000	2,588.7486
Waste						0.0000	0.0000		0.0000	0.0000	142.1018	0.0000	142.1018	8.3980	0.0000	352.0512
Water						0.0000	0.0000		0.0000	0.0000	54.6364	271.0898	325.7261	5.6239	0.1350	506.5664
Total	**3.9681**	**3.9436**	**6.3435**	**0.0288**	**2.0824**	**0.0331**	**2.1155**	**0.5606**	**0.0317**	**0.5923**	**196.7381**	**3,787.0321**	**3,983.7703**	**14.1718**	**0.1450**	**4,381.2678**

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	3.4500	8.0000e-005	9.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Energy	0.0105	0.0956	0.0803	5.7000e-004		7.2700e-003	7.2700e-003		7.2700e-003	7.2700e-003	0.0000	633.3879	633.3879	0.0259	6.8600e-003	636.0804
Mobile	0.4708	3.5436	5.5771	0.0247	1.8197	0.0207	1.8404	0.4899	0.0195	0.5093	0.0000	2,283.9687	2,283.9687	0.1023	0.0000	2,286.5268
Waste						0.0000	0.0000		0.0000	0.0000	56.8407	0.0000	56.8407	3.3592	0.0000	140.8205
Water						0.0000	0.0000		0.0000	0.0000	43.7091	216.8718	260.5809	4.4992	0.1080	405.2531
Total	**3.9314**	**3.6393**	**5.6667**	**0.0253**	**1.8197**	**0.0280**	**1.8477**	**0.4899**	**0.0268**	**0.5166**	**100.5498**	**3,134.2463**	**3,234.7961**	**7.9867**	**0.1149**	**3,468.7000**

	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	**0.92**	**7.72**	**10.67**	**12.03**	**12.62**	**15.30**	**12.66**	**12.62**	**15.45**	**12.77**	**48.89**	**17.24**	**18.80**	**43.64**	**20.75**	**20.83**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Increase Diversity

Improve Destination Accessibility

Improve Pedestrian Network

Implement Trip Reduction Program

Market Commute Trip Reduction Option

	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	0.4708	3.5436	5.5771	0.0247	1.8197	0.0207	1.8404	0.4899	0.0195	0.5093	0.0000	2,283.9687	2,283.9687	0.1023	0.0000	2,286.5268
Unmitigated	0.5041	3.8168	6.2278	0.0280	2.0824	0.0234	2.1058	0.5606	0.0220	0.5826	0.0000	2,585.9650	2,585.9650	0.1114	0.0000	2,588.7486

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1,074.94	1,074.94	1074.94	4,576,593	3,999,198
Unrefrigerated Warehouse-No Rail	58.64	58.64	58.64	249,654	218,157
Unrefrigerated Warehouse-No Rail	162.24	162.24	162.24	690,734	603,589
Total	1,295.81	1,295.81	1,295.81	5,516,980	4,820,943

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
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0

Parking Lot	15.00	8.00	9.00	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No Rail	15.00	8.00	9.00	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	15.00	8.00	9.00	59.00	0.00	41.00	92	5	3
Unrefrigerated Warehouse-No Rail	15.00	8.00	9.00	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Parking Lot	0.523474	0.037926	0.194068	0.114815	0.021291	0.005457	0.036110	0.054974	0.001332	0.002002	0.006933	0.000689	0.000929
Unrefrigerated Warehouse-No Rail	0.523474	0.037926	0.194068	0.114815	0.021291	0.005457	0.036110	0.054974	0.001332	0.002002	0.006933	0.000689	0.000929

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

Install High Efficiency Lighting

	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	529.2668	529.2668	0.0239	4.9500e-003	531.3406
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	792.0584	792.0584	0.0358	7.4100e-003	795.1620
NaturalGas Mitigated	0.0105	0.0956	0.0803	5.7000e-004		7.2700e-003	7.2700e-003		7.2700e-003	7.2700e-003	0.0000	104.1211	104.1211	2.0000e-003	1.9100e-003	104.7399
NaturalGas Unmitigated	0.0139	0.1267	0.1064	7.6000e-004		9.6300e-003	9.6300e-003		9.6300e-003	9.6300e-003	0.0000	137.9009	137.9009	2.6400e-003	2.5300e-003	138.7203

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					

Parking Lot	0	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
Unrefrigerated Warehouse-No Rail	116925	6.3000e-004	5.7300e-003	4.8100e-003	3.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	6.2396	6.2396	1.2000e-004	1.1000e-004	6.2767
Unrefrigerated Warehouse-No Rail	2.1437e+006	0.0116	0.1051	0.0883	6.3000e-004		7.9900e-003	7.9900e-003		7.9900e-003	7.9900e-003	0.0000	114.3958	114.3958	2.1900e-003	2.1000e-003	115.0756
Unrefrigerated Warehouse-No Rail	323543	1.7400e-003	0.0159	0.0133	1.0000e-004		1.2100e-003	1.2100e-003		1.2100e-003	1.2100e-003	0.0000	17.2655	17.2655	3.3000e-004	3.2000e-004	17.3681
Total		**0.0139**	**0.1267**	**0.1064**	**7.6000e-004**		**9.6400e-003**	**9.6400e-003**		**9.6400e-003**	**9.6400e-003**	**0.0000**	**137.9009**	**137.9009**	**2.6400e-003**	**2.5300e-003**	**138.7203**

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					
Parking Lot	0	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
Unrefrigerated Warehouse-No Rail	88283.5	4.8000e-004	4.3300e-003	3.6400e-003	3.0000e-005		3.3000e-004	3.3000e-004		3.3000e-004	3.3000e-004	0.0000	4.7111	4.7111	9.0000e-005	9.0000e-005	4.7391
Unrefrigerated Warehouse-No Rail	1.61858e+006	8.7300e-003	0.0793	0.0667	4.8000e-004		6.0300e-003	6.0300e-003		6.0300e-003	6.0300e-003	0.0000	86.3738	86.3738	1.6600e-003	1.5800e-003	86.8871
Unrefrigerated Warehouse-No Rail	244289	1.3200e-003	0.0120	0.0101	7.0000e-005		9.1000e-004	9.1000e-004		9.1000e-004	9.1000e-004	0.0000	13.0362	13.0362	2.5000e-004	2.4000e-004	13.1137
Total		**0.0105**	**0.0956**	**0.0804**	**5.8000e-004**		**7.2700e-003**	**7.2700e-003**		**7.2700e-003**	**7.2700e-003**	**0.0000**	**104.1211**	**104.1211**	**2.0000e-003**	**1.9100e-003**	**104.7399**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	13679.4	3.9795	1.8000e-004	4.0000e-005	3.9951
Parking Lot	14059.5	4.0901	1.8000e-004	4.0000e-005	4.1061
Parking Lot	3781.75	1.1002	5.0000e-005	1.0000e-005	1.1045
Parking Lot	62310.5	18.1268	8.2000e-004	1.7000e-004	18.1979
Unrefrigerated Warehouse-No Rail	118947	34.6030	1.5600e-003	3.2000e-004	34.7386

Unrefrigerated Warehouse-No Rail	2.18076e+006	634.4091	0.0287	5.9400e-003	636.8949
Unrefrigerated Warehouse-No Rail	329137	95.7498	4.3300e-003	9.0000e-004	96.1250
Total		**792.0584**	**0.0358**	**7.4200e-003**	**795.1620**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Parking Lot	1890.87	0.5501	2.0000e-005	1.0000e-005	0.5522
Parking Lot	31155.2	9.0634	4.1000e-004	8.0000e-005	9.0989
Parking Lot	6839.7	1.9898	9.0000e-005	2.0000e-005	1.9975
Parking Lot	7029.75	2.0450	9.0000e-005	2.0000e-005	2.0531
Unrefrigerated Warehouse-No Rail	1.47032e+006	427.7319	0.0193	4.0000e-003	429.4079
Unrefrigerated Warehouse-No Rail	221911	64.5565	2.9200e-003	6.0000e-004	64.8095
Unrefrigerated Warehouse-No Rail	80196.5	23.3301	1.0500e-003	2.2000e-004	23.4215
Total		**529.2668**	**0.0239**	**4.9500e-003**	**531.3406**

6.0 Area Detail

6.1 Mitigation Measures Area

Use Electric Lawnmower

Use Electric Leafblower

Use Electric Chainsaw

Use Low VOC Paint - Residential Interior

Use Low VOC Paint - Residential Exterior

Use Low VOC Paint - Non-Residential Interior

Use Low VOC Paint - Non-Residential Exterior

	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	3.4500	8.0000e-005	9.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Unmitigated	3.4500	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193

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	0.5234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9258					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.7000e-004	9.0000e-005	9.3200e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0181	0.0181	5.0000e-005	0.0000	0.0193
Total	**3.4501**	**9.0000e-005**	**9.3200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0181**	**0.0181**	**5.0000e-005**	**0.0000**	**0.0193**

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	0.5234					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	2.9258					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.6000e-004	8.0000e-005	9.2400e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Total	**3.4500**	**8.0000e-005**	**9.2400e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0179**	**0.0179**	**5.0000e-005**	**0.0000**	**0.0191**

7.0 Water Detail

7.1 Mitigation Measures Water

Apply Water Conservation Strategy

Use Water Efficient Irrigation System

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	260.5809	4.4992	0.1080	405.2531
Unmitigated	325.7261	5.6239	0.1350	506.5664

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	172.217 / 0	325.7261	5.6239	0.1350	506.5664
Total		**325.7261**	**5.6239**	**0.1350**	**506.5664**

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	137.773 / 0	260.5809	4.4992	0.1080	405.2531
Total		**260.5809**	**4.4992**	**0.1080**	**405.2531**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Institute Recycling and Composting Services

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	56.8407	3.3592	0.0000	140.8205
Unmitigated	142.1018	8.3980	0.0000	352.0512

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	700.04	142.1018	8.3980	0.0000	352.0512
Total		**142.1018**	**8.3980**	**0.0000**	**352.0512**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	280.016	56.8407	3.3592	0.0000	140.8205
Total		**56.8407**	**3.3592**	**0.0000**	**140.8205**

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

Biological Resources Assessment

700 Crocker

Solano County, California
29 March 2018

MADRONE
ECOLOGICAL
CONSULTING

Prepared for:
LDK Ventures
3140 Peacekeeper Way
McClellan, CA 95652

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Attachment A. 700 Crocker Illustrative Plan
Attachment B. California Natural Diversity Database Species List for "Allendale, California" USGS Quadrangle
Attachment C. IPaC Trust Resource Report for the Study Area
Attachment D. CNPS Inventory of Rare and Endangered Plants Query for the "Allendale, California" USGS Quadrangle and Eight Surrounding Quadrangles
Attachment E. Wildlife List
Attachment F. Aquatic Resources and Vegetation Communities Impacts

1.0 INTRODUCTION

This report presents the results of a Biological Resources Assessment (BRA) conducted for the 700 Crocker project area (Study Area) (**Figure 1**). The approximately 65-acre Study Area is located at 700 Crocker Drive, City of Vacaville, Solano County, California. The Study Area falls within the Rancho Los Putos Civil Land Grant, Township 7 North, Range 1 West (MDB&M) of the "Allendale, California" 7.5-Minute Series USGS Topographic Quadrangle (USGS 2013) (**Figure 1**).

1.1 Project Description

The Proposed Project will reconfigure the existing three parcels within the Study area. Proposed Parcel A contains the existing warehouse distribution building (approximately 830,000 SF). This existing warehouse will be remodeled which includes site repairs and other improvements. Proposed Parcel B, is located south of Gibson Canyon Creek and north of Parcel A, will involve construction of a new large warehouse distribution building (617,760 SF) along with the required parking and other site improvements. Parcel C will be to the north of Gibson Canyon Creek and will consist of 2 warehouse distribution buildings (33,696 SF and 93,240 SF) along with the required parking and other site improvements. Two new bridges over Gibson Canyon Creek will be constructed to connect Parcels B and C. Additionally two storm water outfalls will be installed within the banks of Gibson Canyon Creek. See **Attachment A** for a project land plan.

2.0 REGULATORY SETTING

This section describes federal, state and local laws and policies that are relevant to this assessment of biological resources.

2.1 Federal Regulations

2.1.1 Federal Endangered Species Act

The Federal Endangered Species Act (FESA) of 1973 protects species that are federally listed as endangered or threatened with extinction. FESA prohibits the unauthorized "take" of listed wildlife species. Take includes harassing, harming, pursuing, hunting, shooting, wounding, killing, trapping, capturing, or collecting wildlife species or any attempt to engage in such activities. Harm includes significant modifications or degradations of habitats that may cause death or injury to protected species by impairing their behavioral patterns. Harassment includes disruption of normal behavior patterns that may result in injury to or mortality of protected species. Civil or criminal penalties can be levied against persons convicted of unauthorized "take." In addition, FESA prohibits malicious damage or destruction of listed plant species on federal lands or in association with federal actions, and the removal, cutting, digging up, damage, or destruction of listed plant species in violation of state law. FESA does not afford any protections to federally listed plant species that are not also included on a state endangered species list on private lands with no associated federal action.

2.1.2 Clean Water Act, Section 404

Section 404 of the Federal Clean Water Act requires that a Department of the Army permit be issued prior to the discharge of any dredged or fill material into waters of the United States, including wetlands. The U. S. Army Corps of Engineers (USACE) administers this program, with oversight from the U. S. Environmental Protection Agency. Waters of the United States include all navigable waters; interstate waters and wetlands; all intrastate waters and wetlands that could affect interstate or foreign commerce; impoundments of the above; tributaries of the above; territorial seas; and wetlands adjacent to the above.

2.1.3 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the take, possession, import, export, transport, selling, purchase, barter, or offering for sale, purchase or barter, any native migratory bird, their eggs, parts, and nests, except as authorized under a valid permit (50 CFR 21.11.). Likewise, Section 3513 of the California Fish & Game Code prohibits the "take or possession" of any migratory non-game bird identified under the MBTA. Therefore, activities that may result in the injury or mortality of native migratory birds, including eggs and nestlings, would be prohibited under the MBTA.

2.1.4 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit [16 USC 668(a); 50 CFR 22]. The USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

2.2 State Regulations

2.2.1 California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires evaluations of project effects on biological resources. Determining the significance of those effects is guided by Appendix G of the CEQA guidelines. These evaluations must consider direct effects on a biological resource within the project site itself, indirect effects on adjacent resources, and cumulative effects within a larger area or region. Effects can be locally important but not significant according to CEQA if they would not substantially affect the regional population of the biological resource. Significant adverse impacts on biological resources would include the following:

- Substantial adverse effects on any species identified as candidate, sensitive, or special-status in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife (CDFW) or the U.S. Fish and Wildlife Service (USFWS) (these effects could be either direct or via habitat modification);

- Substantial adverse impacts to species designated by the California Department of Fish and Game (2009) as Species of Special Concern;
- Substantial adverse effects on riparian habitat or other sensitive habitat identified in local or regional plans, policies, or regulations or by CDFW and USFWS;
- Substantial adverse effects on federally protected wetlands defined under Section 404 of the Clean Water Act (these effects include direct removal, filling, or hydrologic interruption of marshes, vernal pools, coastal wetlands, or other wetland types);
- Substantial interference with movements of native resident or migratory fish or wildlife species population, or with use of native wildlife nursery sites;
- Conflicts with local policies or ordinances protecting biological resources (e.g. tree preservation policies); and
- Conflict with provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan.

2.2.2 State Endangered Species Act

With limited exceptions, the California Endangered Species Act (CESA) of 1984 protects state-designated endangered and threatened species in a way similar to FESA. For projects on private property (i.e. that for which a state agency is not a lead agency), CESA enables CDFW to authorize take of a listed species that is incidental to carrying out an otherwise lawful project that has been approved under CEQA (Fish & Game Code Section 2081).

2.2.3 California Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code, § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish) provide that fully protected species may not be taken or possessed at any time. Furthermore, CDFW prohibits any state agency from issuing incidental take permits for fully protected species. CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit.

2.2.4 California Species of Special Concern

The SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the federal or California ESAs or the California Fish and Game Code, but currently satisfies one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not state) threatened or endangered, or meets the state definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for state threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for state threatened or endangered status.

SSC are typically associated with habitats that are threatened. Project-related impacts to SSC, state-threatened or endangered species are considered "significant" under CEQA.

2.2.5 Native Plant Protection Act

The Native Plant Protection Act (NPPA) was enacted in 1977 and allows the Fish and Game Commission to designate plants as rare or endangered. There are 64 species, subspecies, and varieties of plants that are protected as rare under the NPPA. The NPPA prohibits take of endangered or rare native plants, but includes some exceptions for agricultural and nursery operations; emergencies; and after properly notifying CDFW for vegetation removal from canals, roads, and other sites, changes in land use, and in certain other situations.

2.2.6 Clean Water Act, Section 401

Section 401 of the Clean Water Act requires any applicant for a 404 permit in support of activities that may result in any discharge into waters of the United States to obtain a water quality certification with the Regional Water Quality Control Board (RWQCB). This program is meant to protect these waters and wetlands by ensuring that waste discharged into them meets state water quality standards. Because the water quality certification program is triggered by the need for a Section 404 permit (and both programs are a part of the Clean Water Act), the definition of waters of the United States under Section 401 is the same as that used by the USACE under Section 404.

2.2.7 California Water Code, Porter-Cologne Act

The Porter Cologne Act, from Division 7 of the California Water Code, requires any person discharging waste or proposing to discharge waste that could affect the quality of waters of the state to file a report of waste discharge (RWD) with the RWQCB. The RWQCB can waive the filing of a report, but once a report is filed, the RWQCB must either waive or adopt water discharge requirements (WDRs). "Waters of the state" are defined as any surface water or groundwater, including saline waters, within the boundaries of the state.

2.2.8 California Fish and Game Code, Section 1600 – Streambed and Lake Alteration

The CDFW is responsible for conserving, protecting, and managing California's fish, wildlife, and native plant resources. To meet this responsibility, the Fish and Game Code, Section 1602, requires notification to CDFW of any proposed activity that may substantially modify a river, stream, or lake. Notification is required by any person, business, state or local government agency, or public utility that proposes an activity that will:

- substantially divert or obstruct the natural flow of any river, stream or lake;
- substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or
- deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake.

For the purposes of Section 1602, rivers, streams and lakes must flow at least intermittently through a bed or channel. If notification is required and CDFW believes the proposed activity is likely to result in adverse harm to the natural environment, it will require that the parties enter into a Lake or Streambed Alteration Agreement (LSAA).

2.2.9 California Fish and Game Code, Section 3503.5 - Raptor Nests

Section 3503.5 of the Fish and Game Code makes it unlawful to take, possess, or destroy hawks or owls, unless permitted to do so, or to destroy the nest or eggs of any hawk or owl.

2.3 Local Regulations

2.3.1 City of Vacaville Tree Ordinance

The City of Vacaville (City) Tree Ordinance is found in Chapter 14.09.131 of their General Plan. It states that "For the purposes of this chapter, tree means any live woody plant having one or more well defined perennial stems with an aggregate circumference of 31 inches or more, when measured at 4-1/2 feet above ground level." Per the Tree Ordinance, "Prior to cutting down, removing, or destroying one or more trees on any property in the City, the property owner or the owner's authorized representative shall submit an application for a tree removal permit."

2.3.2 Solano Multi-Species Habitat Conservation Plan

In October 2012, Solano County Water Agency (SCWA) issued a final administrative draft of the Solano Multi-species Habitat Conservation Plan (HCP). The Solano Multi-species HCP establishes a framework for complying with federal and state regulations for endangered species while accommodating development of infrastructure, and ongoing operations and maintenance activities associated with flood control, irrigation facilities, and other public infrastructure undertaken by or under the permitting authority/control of the Solano Multi-species HCP participants within the plan area. The City of Vacaville is a Solano Multi-

species HCP participant. The plan has not been adopted to date and likely will not be adopted prior to the project going to construction.

2.3.3 City of Vacaville General Plan

The City of Vacaville General Plan Conservation and Open Space Element provides guidance for new development and focuses on the protection of natural areas, including riparian corridors, which provide habitat and cover for wildlife and vegetation. The City provides specific protection for biological resources, as described in the following policies (City of Vacaville 2015).

Policy COS-P1.5 Require new development proposals to provide baseline assessments prepared by qualified biologists. The assessment shall contain sufficient detail to characterize the resources on, and adjacent to, the development site. The assessment shall also identify the presence of important and sensitive resources, such as wetlands, riparian habitats, and rare, threatened, or endangered species affected by the development.

Policy COS-P1.6 Require that new development minimize the disturbance of natural habitats and vegetation. Require revegetation of disturbed natural habitat areas with native or non-invasive naturalized species.

Policy COS-P1.7 Encourage new development to incorporate native vegetation into landscape plans.

Policy COS-P1.8 Prohibit the use of invasive, non-native species, as identified by the State or County Department of Agriculture or other authoritative sources, in landscaping on public property or in common areas in private developments.

Policy COS-P1.9 Require that new development include provisions to protect and preserve wetland habitats that meet one of the following conditions:

- The wetlands contribute to the habitat quality and value of reserve/preserve lands established or expected to be established in perpetuity for conservation purposes.
- The wetlands are contiguous to riparian or stream corridors, or other permanently protected lands.
- The wetlands are located within or contiguous to other high value natural areas.

Policy COS-P1.10 Where avoidance of wetlands is not practicable or does not contribute to long-term conservation of the resources, require new development to provide for off-site

mitigation that results in no net loss of wetland acreage and functional value within the watersheds draining to the Delta or Suisun Marsh.

Policy COS-P1.12 Until the Solano Habitat Conservation Plan (HCP) is adopted, comply with all of the Avoidance, Minimization, and Mitigation Measures listed in the Draft Solano HCP (see Appendix A for a list of the Avoidance and Minimization Measures that are applicable to Vacaville). In addition, require that development projects provide copies of required permits, or verifiable statements that permits are not required, from the California Department of Fish and Wildlife (2081 Individual Take Permit) and US Fish and Wildlife Service (Section 7 Take Authorization) prior to receiving grading permits or other approvals that would permit land disturbing activities and conversion of habitats or impacts to protected species. In cases where environmental review indicates that such permits may not be required, the Community Development Director may establish time limits of not less than 45 days from the submission of an adequate request for concurrence response from an agency. If the agency has not responded, or requested a time extension of no more than 90 days to complete their assessment, within the established time frame, applicable grading permits or other authorizations may be provided, subject to other City requirements and review. However, the City's issuance of grading permits or other authorizations does not absolve the applicant's obligations to comply with all other State and federal laws and regulations.

3.0 METHODOLOGY

3.1 Literature Review

A list of special-status species with potential to occur within the Study Area was developed by conducting a query of the following databases:

- California Natural Diversity Database (CNDDB) (CNDDB 2018) query of the Allendale 7.5 minute USGS quadrangle (**Attachment B**) and all areas within 5 miles of the Study Area (**Figures 2 and 3**);
- USFWS Information for Planning and Conservation (IPaC) (USFWS 2017a) query for the Study Area (**Attachment C**);
- California Native Plant Society (CNPS) Rare and Endangered Plant Inventory (CNPS 2018) query of the "Allendale, California" USGS topo quadrangle, and the eight surrounding quadrangles (**Attachment D**); and
- Western Bat Working Group (WBWG) Species Matrix (WBWG 2018).

In addition, any special-status species that are known to occur in the region, but that were not identified in any of the above database searches were also analyzed for their potential to occur within the Study Area.

For the purposes of this Biological Resources Assessment, special-status species is defined as those species that are:

- listed as threatened or endangered, or proposed or candidates for listing by the USFWS or National Marine Fisheries Service;
- listed as threatened or endangered and candidates for listing by CDFW;
- identified as Fully Protected species or species of special concern by CDFW;
- identified as Medium or High priority species by the WBWG (WBWG 2017); and
- plant species considered to be rare, threatened, or endangered in California by the CNPS and CDFW [California Rare Plant Rank (CRPR) 1, 2, and 3]:
  - CRPR 1A: Plants presumed extinct.
  - CRPR 1B: Plants rare, threatened, or endangered in California and elsewhere.
  - CRPR 2A: Plants extirpated in California, but common elsewhere.
  - CRPR 2B: Plants rare, threatened, or endangered in California, but more common elsewhere.
  - CRPR 3: Plants about which the CNPS needs more information – a review list.

3.2 Field Surveys

Madrone senior biologists Bonnie Peterson, Matt Hirkala, and Daria Snider conducted field surveys of the Study Area on the 22nd of June, and 6th and 19th of October 2017, and the 24 of January 2018 to assess the suitability of habitats on-site to support special-status species. Meandering pedestrian surveys were performed on foot throughout the Study Area. Vegetation communities were classified in accordance with *The Manual of California Vegetation, Second Edition* (Sawyer, Keeler-Wolf and Evens 2009), and plant taxonomy was based on the nomenclature in the *Jepson eFlora* (Jepson Flora Project 2018). A list of all wildlife species observed during field surveys is included as **Attachment E**.

4.0 EXISTING CONDITIONS

The Study Area is located south of Midway Road and west of Crocker Drive, and accessible in the southeast corner from 700 Crocker Drive, or from Midway Road along the north. I-505 is located east of the Study Area and Eubanks Drive is located west. The southern portion of the 700 Crocker site is an inactive grocery distribution center, and is mostly developed, including large warehouses, paved parking lots, and associated infrastructure. The remainder of the site has ruderal grassland and is disked for vegetation control annually, and this area comprised the bulk of the Study Area.

Per a review of historic aerials (historicaerials.com 2018), two branches of Gibson Canyon Creek previously cut diagonally through the site and were rerouted north and south of the distribution center. The warehouse was constructed around 1968 and the reroute of Gibson Canyon Creek likely occurred at this time. Gibson Canyon Creek now bounds the Study area to the east and flows from west to east through the northern portion of the Study Area (**Figure 4**). Wetlands associated with Gibson Canyon Creek, located east of the I-505, drain to a drainage ditch that crosses under Crocker Drive and flows south west of 700 Crocker Drive. Additionally, a portion of the Solano County Irrigation District Kilkenny Canal 3 flows west

to east through the northern portion of the Study Area. The water flow through the canal is delivered from the Putah South Canal and is controlled by a series of weirs and gates.

The Study Area is relatively flat with elevations ranging from approximately 110-120 feet above mean sea level. Surrounding properties including industrial to the south, vacant land to the west, rural residential and low-density business to the north. The I-505 freeway is located east of the Study Area, and beyond that is agricultural and open space with a riparian corridor and adjacent wetlands.

4.1 Terrestrial Vegetation Communities

Four terrestrial vegetation communities were identified within the Study Area. These communities consist of ruderal grassland (47.2 acres), developed (12.7 acres), ruderal (3.8 acres), and spoils piles (1.1 acres) and are shown on **Figure 5. Vegetation Communities**.

4.1.1 Ruderal Grassland

There is approximately 47.2 acres of ruderal grassland within the Study Area. This community is disked annually and minimal upland vegetation is present. Upland vegetation within the ruderal grassland is comprised primarily of sparse non-native annual grassland and ruderal vegetation adapted to the frequent vegetation control practices, including Oats (*Avena sp*.), annual rygrass (*Festuca perennis*), turkey mullein (*Croton setiger*), yellow star thistle (*Centaurea solstitialis*), and soft chess brome (*Bromus hordeaceus*).

4.1.2 Developed

There is approximately 12.7 acres of developed areas within the Study Area. These developed areas consist of paved roadways, paved parking lots, industrial buildings, and the managed compacted gravel access roads on either sides of the canal.

4.1.3 Ruderal

There is approximately 3.8 acres of ruderal vegetation located within the Study Area. These areas consist of areas along roadways and Gibson Canyon Creek that are dominated by herbaceous annual and biannuals including spiny cocklebur (*Xanthium spinosum*), annual rygrass, yellow star thistle, and curly dock (*Rumex crispus*) with scattered trees and shrubs including bluegum eucalyptus (*Eucalyptus globulus*), walnut (*Juglans* sp.), wild plumb (*Prunus* sp.), and Chinese pistache (*Pistacia chinensis*). West and east of the Study Area, this corridor includes a mature eucalyptus windrow. These ruderal areas are maintained on a regular basis by mechanical vegetation removal and are dominated by non-native ornamental species.

4.1.4 Fill/Dump Site

There is approximately 1.1 acres of fill/dump site located within the northern portion of the Study Area. Piles of gravel and earthen fill are interspersed with coyote bush (*Baccharis pilularis*), white mulberry (*Morus*

alba), and Gooding's black willow (*Salix gooddingii*). A number of small seasonal wetlands are also scattered within this vegetation community.

4.2 Aquatic Resources

An Aquatic Resources Delineation has been submitted to the USACE for the Study Area by Madrone (Madrone 2018). Aquatic resources mapped within the Study Area are depicted in **Figure 4**. A total of 1.637 acres of aquatic resources were mapped within the Study Area (**Table 1**) (Madrone 2018). A description of each of the aquatic resources types is included below.

Table 1. Aquatic Resources Mapped within the Study Area

Resource Type	Acreage
Seasonal Wetland	0.187
Drainage Ditch	0.010
Intermittent Drainage	0.940
Non-Jurisdictional Canal	0.500
Total	**1.637**

4.2.1 Seasonal Wetland

Fourteen depressional seasonal wetlands occur within the Study Area. Seasonal wetlands are depressional wetlands that pond water seasonally. SW-01 is located just south of Midway Road and drains through a culvert to drainage ditch DD-1. The remainder of the seasonal wetlands are isolated depressions. Five seasonal wetlands (SW-3, SW-4, SW-5, SW-6, SW-7, SW-8 and SW-9) are depressions within a previous fill site that are interspersed with piles of dirt, rock, and plant debris. The remaining six seasonal wetlands (SW-2, SW-10, SW-11, SW-12, SW-13 and SW-14) are located in the ruderal field that is disked annually, including in the spring of 2017 prior to the delineation site visits. Seasonal wetlands are dominated by curly dock, turkey mullien, common spikerush (*Eleocharis macrostachya*), annual rygrass, and hyssop loosestrife (*Lythrum hyssopifolia*).

4.2.2 Drainage Ditch

A roadside drainage ditch (DD-1) south of Midway Road flows from east to west into a culvert which discharges into ID-1. Approximately 0.010 acre of drainage ditch (DD-1) fall within the Study Area. This ditch is mostly unvegetated. Scattered herbaceous vegetation within the ditch consists of ruderal non-native upland plant species including chicory (*Cichorium intybus*), and stinkwort (*Dittrichia graveolens*). This ditch receives flows from SW-1. Hydrology of the ditch is driven by runoff from the adjacent roadway.

4.2.3 Intermittent Drainage (Gibson Canyon Creek)

Gibson Canyon Creek (ID-1, ID-2, and ID-3) flows from west to east through the Study Area. The creek is intermittent in nature, with no flows observed during the July and October site visits, and minimal flows in

the northwestern most segment during the December site visit. The creek crosses in and out of the Study Area with four segments (0.940 acre) falling within the Study Area. The bed and banks of the creek are earthen and the banks are lined with herbaceous non-native grasses and forbs including tall nutsedge, spiny cocklebur, annual rygrass, yellow star thistle, and curly dock with scattered trees and shrubs including bluegum eucalyptus and walnut.

4.2.4 Canal (Kilkenny Canal 3)

An irrigation canal (Kilkenny Canal 3) flows through the northern portion of the Study Area. The canal is well maintained with compacted gravel or dirt sides and water within the canal is controlled by a series of pipes and wears. The canal was devoid of vegetation and does not contain hydrophytic vegetation. Kilkenny Canal is a component of the Solano Irrigation District waterworks. Flow to the canal originated from Putah Canal, however, flows are not relatively permanent, and are controlled via a series of weirs. The canal appears to have been created in uplands as an irrigation feature and does not contain wetlands or adjacent wetlands.

4.3 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2018), four mapping units occur within the Study Area (**Figure 6**). None of these soils consist of hydric components, or are known to contain hydric inclusions (NRCS 2018). Soils within the Study Area fall within the hydrological soil groups C and D, which generally have a slow infiltration rate when thoroughly wet, a slow to very slow rate of water transmission, and typically a higher runoff potential.

5.0 RESULTS

Table 2 provides a list of special-status species that were evaluated, including their listing status, habitat associations, and their potential to occur in the Study Area. The following set of criteria was used to determine each species' potential for occurrence on the site:

- Present: Species occurs on the site based on CNDDB records, and/or was observed on the site during field surveys.
- High: The site is within the known range of the species and suitable habitat exists.
- Moderate: The site is within the known range of the species and very limited suitable habitat exists.
- Low: The site is within the known range of the species and there is marginally suitable habitat or the species was not observed during protocol-level surveys conducted on-site.
- Absent/No Habitat Present: The site does not contain suitable habitat for the species, the species was not observed during protocol-level floristic surveys conducted on-site, or the site is outside the known range of the species.

Figures 2 and 3 are exhibits displaying CNDDB occurrences within five miles of the Study Area. Below is a discussion of all special-status plant and animal species with potential to occur on the site.

Table 2. Special-Status Species with Potential to Occur within the 700 Crocker Study Area

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Plants				
Astragalus tener var. *ferrisiae* Ferris' milk-vetch	None	CRPR 1B.1	Meadows, foothill and valley grasslands. Usually found in dry adobe soils.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Astragalus tener var. *tener* Alkali milk-vetch	None	CRPR 1B.2	Favors alkaline playas and vernal pools within valley and foothill grasslands with adobe clays. Also occurs in open, alkaline and seasonally moist meadows from 0 to 200 feet. Usually occurs in wetlands.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Atriplex cordulata var. *cordulata* heartscale	None	CRPR 1B.2	Grows in grasslands with sandy alkaline or saline soils.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Atriplex depressa brittlescale	None	CRPR 1B.2	Prefers meadows or grasslands with alkaline or saline clay soils.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Atriplex persistens vernal pool smallscale	None	CRPR 1B.2	Vernal pools or other seasonal wetlands with alkaline soils.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Calochortus pulchellus Mt. Diablo fairy-lantern	None	CRPR 1B.2	Wooded slopes, though rarely found in chaparral.	**No Habitat Present.** No wooded slopes or chaparral present.
Centromadia parryi ssp. *parryi* pappose tarplant	None	CRPR 1B.2	Found on alkaline soils in coastal prairie, meadows, seeps, coastal salt marshes, and valley/foothill grasslands.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Chloropyron molle ssp. *hispidum* Hispid bird's-beak	--	CRPR 1B.1	Prefers seasonally flooded , saline-alkali soils at elevations below 500 feet.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Cicuta maculata var. *bolanderi* Bolander's water-hemlock	None	CRPR 2B.1	Brackish or freshwater marshes and swamps.	**No Habitat Present.** No marshes or swamps are present within the Study Area.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Delphinium recurvatum recurved larkspur	None	CRPR 1B.2	Poorly drained, fine alkaline soils in grasslands between 10 and 2,400 feet.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Downingia pusilla Dwarf downingia	None	CRPR 2B.2	Vernal pools and other depressional wetlands	**Low.** The seasonal wetlands within the Sudy Area represents extremely marginal habitat for this species.
Etriplex joaquinana San Joaquin spearscale	None	CRPR 1B.2	Found in seasonal alkali wetlands or alkali sink scrub.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Fritillaria pluriflora adobe-lily	None	CRPR 1B.2	Grows in chaparral, cismontane woodland, or foothill grasslands with clay or serpentine soils.	**No Habitat Present.** Serpentine soils do not occur within the Study Area.
Gilia capitata ssp. *tomentosa* wooly-headed gilia	None	CRPR 1B.1	Serpentine, rocky outcrops within coastal bluff scrub or valley/foothill grasslands. Blooms from May to July.	**No Habitat Present.** Serpentine soils do not occur within the Study Area.
Gratiola heterosepala Bogg's Lake hedge-hyssop	--	CE, CRPR 1B.2	Vernal pools and margins of lakes/ponds	**No Habitat Present.** The Study Area lacks the aquatic habitats necessary to support this species.
Hesperolinon breweri Brewer's western flax	None	CRPR 1B.2	Grows in chaparral, cismontane woodland, or foothill grasslands usually with rocky serpentine soils.	**No Habitat Present.** Serpentine soils do not occur within the Study Area.
Hibiscus lasiocarpus var. *occidentalis* woolly rose-mallow	None	CRPR 1B.2	Species typically occurs in freshwater-saturated riverbanks and low peat islands located within sloughs at elevations below 360 feet.	**No Habitat Present.** No marshes are present within the Study Area and the creekbanks do not support appropriate habitat for this species.
Isocoma arguta Carquinez goldenbush	None	CRPR 1B.1	Prefers foothill/valley grasslands with alkaline soils. Seems to favor low benches near drainages.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Lasthenia conjugens Contra Costa goldfields	Endangered	CRPR 1B.1	Found in mesic areas in cismontane woodland and annual grassland and in alkaline playas and vernal pools.	**Low.** The seasonal wetlands within the Sudy Area represents extremely marginal habitat for this species.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Lathyrus jepsonii var. *jepsonii* Delta tule pea	None	CRPR 1B.2	This species prefers tidally influenced channels, brackish marshes and swamps below 15 feet.	**No Habitat Present.** No marshes or swamps are present within the Study Area.
Layia septentrionalis Colusa layia	None	CRPR 1B.2	Favors chaparral, cismontane woodland, or foothill grasslands with sandy or serpentine soils.	**No Habitat Present.** Serpentine soils do not occur within the Study Area.
Legenere limosa Legenere	--	CRPR 1B.1	Vernal pools or other seasonal wetlands with prolonged inundation.	**No Habitat Present.** No seasonal wetlands with sufficient hydroperiod occur within the Study Area.
Lepidium latipes var. *heckardii* Heckard's pepper-grass	None	CRPR 1B.2	This annual prefers valley and foothill grasslands with alkaline soils.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Leptosiphon jepsonii Jepson's leptosiphon	None	CRPR 1B.2	Favors chaparral, cismontane woodland, or foothill grasslands with volcanic serpentine soils.	**No Habitat Present.** Volcanic serpentine soils do not occur within the Study Area.
Lilaeopsis masonii Mason's lilaeopsis	None	Rare, CRPR 1B.1	This species prefers brackish or freshwater swamps, intertidal marshes, and riparian scrub at or below 35 feet.	**No Habitat Present.** No marshes or swamps are present within the Study Area.
Limosella australis Delta mudwort	None	CRPR 2B.1	Favors freshwater and brackish marshes, swamps, or riparian scrub. Usually found in association with muddy banks in the Delta.	**No Habitat Present.** Outside of the known range of the species.
Malacothamnus helleri Heller's bush-mallow	None	CRPR 3.3	Chaparral or riparian woodland	**No Habitat Present.** No chaparral or riparian woodland present within the Study Area.
Myosurus minimus ssp. *apus* little mousetail	None	CRPR 3.1	Alkaline vernal pools.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Navarretia leucocephala ssp. bakeri Baker's navarretia	None	CRPR 1B.1	Favors vernal pools, cismontane woodland, lower montane coniferous forest, meadows and seeps, valley and foothill grasslands.	**Low.** The seasonal wetlands within the Sudy Area represents extremely marginal habitat for this species.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Neostapfia colusana Colusa grass	Threatened	Endangered, CRPR 1B.1	In the dry bottoms of large/deep vernal pools and other seasonally flooded features.	**No Habitat Present.** No seasonal wetlands with sufficient hydroperiod occur within the Study Area.
Orcuttia inaequalis (San Joaquin orcutt grass)	Threatened	Endangered, CRPR 1B.1	Vernal pools and other seasonally flooded features.	**No Habitat Present.** No seasonal wetlands with sufficient hydroperiod occur within the Study Area.
Plagiobothrys hystriculus bearded popcornflower	None	CRPR 1B.1	Vernal pools or other seasonal wetlands.	**Low.** The seasonal wetlands within the Sudy Area represents extremely marginal habitat for this species.
Puccinellia simplex California alkali grass	None	CRPR 1B.2	Alkaline sinks, flats, and lake margins, vernal pools, meadows, seeps, and riparian wetlands.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Sidalcea keckii Keck's checkerbloom	Endangered	CRPR 1B.1	Cismontane woodland, valley and foothill grassland; often found in serpentine soils at elevations between 240 and 2,150 feet.	**No Habitat Present.** Outside of the elevational range of the species.
Stuckenia filiformis ssp. *alpina* slender-leaved pondweed	None	CRPR 2B.2	Marshes, swamps, and shallow clear water of lakes and drainage channels.	**No Habitat Present.** The Study Area lacks the aquatic habitats necessary to support this species.
Symphyotrichum lentum Suisun Marsh aster	None	CRPR 1B.2	Fresh and salt water marshes, often associated with blackberries, cattails, and bulrush.	**No Habitat Present.** No marshes are present within the Study Area.
Trifolium amoenum Showy indian clover	Endangered	CRPR 1B.1	Grows in wet swales within foothill/valley grasslands and coastal bluff scrub. Sometimes found on serpentine soils.	**Low.** The seasonal wetlands within the Sudy Area represents extremely marginal habitat for this species.
Trifolium hydrophilum saline clover	None	CRPR 1B.2	Grows in marshes, swamps, and vernal pools with alkaline soils.	**No Habitat Present.** Alkaline / saline soils are not present within the Study Area.
Tuctoria mucronata Crampton's tuctoria (Solano grass)	Endangered	Endangered, CRPR 1B.1	In the dry bottoms of large/deep vernal pools and other seasonally flooded features.	**No Habitat Present.** No seasonal wetlands with sufficient hydroperiod occur within the Study Area.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Viburnum ellipticum oval-leaved viburnum	None	CRPR 2B.3	Prefers chaparral and cismontane woodlands, and lower cismontane coniferous forests at elevations from 700 feet to 4,600 feet.	**No Habitat Present.** Outside of the elevational range of the species.
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	FE	--	Very large, turbid vernal pools.	**Low.** Most of the seasonal wetlands within the Study Area are too small to support this species, but the largest represents low quality habitat for Conservancy fairy shrimp.
Branchinecta lynchi Vernal pool fairy shrimp	FT	--	Vernal pools.	**High.** Suitable habitat for this species is present in the seasonal wetlands within the Study Area.
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	--	Dependent upon elderberry *(Sambucus* species) shrubs as primary host species.	**No Habitat Present.** No elderberry shrubs have been observed within the Study Area.
Lepidurus packardi Vernal pool tadpole shrimp	FE	--	Vernal pools.	**High.** Suitable habitat for this species is present in the seasonal wetlands within the Study Area.
Fish				
Hypomesus transpacificus Delta smelt	FT	CE	Adults are found in the brackish open surface waters of the Delta and Suisun Bay. Though spawning has never been observed, it is believed to occur in tidally influenced sloughs and drainages on the freshwater side of the mixing zone.	**No Habitat Present.** No tidally influenced sloughs or drainages are present within the Study Area.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Oncorhynchus mykiss irideus Central Valley steelhead	FE	--	Anadromous species requiring freshwater water courses with gravelly substrates for breeding. The young remain in freshwater areas before migrating to estuarine and marine environments.	**No Habitat Present.** Gibson Canyon Creek does not represents suitable habitat for this species.
Amphibians				
Ambystoma californiense California tiger salamander	FT	CT, CSC	Breeds in ponds or other deeply ponded wetlands, and uses gopher holes and ground squirrel burrows in adjacent grasslands for upland refugia/foraging.	**No Habitat Present.** No documented occurrences of this species within 5-miles of the Study Area. Aquatic resources within the Study Area do not pond long enough to provide suitable breeding or dispersal habitat. Site is highly manipulated and does not represent upland habitat for the species.
Rana draytonii California red-legged frog	FT	CSC	Breeds in permanent to semi-permanent aquatic habitats including lakes, ponds, marshes, creeks, and other drainages.	**No Habitat Present.** No documented occurrences of this species within 5-miles of the Study Area. Aquatic resources within the Study Area do not pond long enough to provide suitable breeding or dispersal habitat.
Reptiles				
Actinemys marmorata Western pond turtle	--	CSC	Ponds, rivers, streams, wetlands, and irrigation ditches with associated marsh habitat.	**Low.** Gibson Canyon Creek and the irrigation canal represent low quality habitat for western pond turtle.
Thamnophis gigas Giant garter snake	FT	CT	Rivers, canals, irrigation ditches, rice fields, and other aquatic habitats with slow moving water and heavy emergent vegetation.	**No Habitat Present.** Aquatic resources within the Study Area do not represent suitable habitat for the species. Species has not been documented within 10-miles of the Study Area.
Birds				

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Agelaius tricolor Tricolored blackbird	--	CE, CSC	Colonial nester in cattails, bulrush, or blackberries associated with marsh habitats.	**No Habitat Present.** No suitable nesting habiat for this species occurs within the Study Area.
Aquila chrysaetos Golden eagle	--	CFP	Forages in open areas including grasslands, savannahs, deserts, and early successional stages of shrub and forest communities. Nests in large trees and cliffs.	**No Habitat Present.** No suitable nesting habiat for this species occurs within the Study Area. The ruderal grassland is too fragmented to provide suitable foraging habitat for the species.
Asio flammeus Short-eared owl	--	CSC	Typically found in open areas with few trees such as grasslands, prairies, dunes, meadows, and croplands.	**No Habitat Present.** No suitable nesting habiat for this species occurs within the Study Area. The ruderal grassland is too fragmented to provide suitable foraging habitat for the species.
Athene cunicularia Burrowing owl	--	CSC	Nests in abandoned ground squirrel burrows associated with open grassland habitats.	**Low.** Although few ground squirrel burrows were observed, occasional burrows and debris scattered throughout the Study Area could provide artificial burrows. The ruderal grasslsnd provide suitable foraging habitat.
Buteo regalis Ferruginous hawk	--	CSC	A wintering species in California. Forages in open areas such as grasslands and fields for ground squirrels as well as other small mammals, birds, lizards, snakes, and rabbits.	**No Habitat Present.** No suitable nesting habiat for this species occurs within the Study Area. The ruderal grassland is too fragmented to provide suitable foraging habitat for the species.
Buteo swainsoni Swainson's hawk	--	CT	Nests in large trees, preferably in riparian areas. Forages in fields, cropland, irrigated pasture, and grassland near large riparian corridors.	**High.** The ruderal grassland throughout the Study Area represent suitable foraging habitat for Swainson's hawk, and the trees within the Study Area provide suitable nesting habitat.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Circus cyaneus Northern harrier	--	CSC	Nests in emergent wetland/marsh, open grasslands, or savannah habitats. Forages in open areas such as marshes, agricultural fields, and grasslands.	**High.** The ruderal grassland is suitable nesting and foraging habitat for this species.
Elanus leucurus White-tailed kite	--	CFP	Open grasslands, fields, and meadows are used for foraging. Isolated trees in close proximity to foraging habitat are used for perching and nesting.	**High.** The trees throughout the Study Area provide suitable nesting habitat, and the ruderal grassland provide suitable foraging habitat.
Haliaeetus leucocephalus Bald eagle	FD	CE, CFP	Nest in large trees within 1 mile of lakes, rivers, or larger streams. Forages in nearby open areas.	**No Habitat Present.** Suitable breeding habitat and foraging habitat are absent.
Lanius ludovicianus Loggerhead shrike	--	CSC	Occurs in open areas with sparse trees, shrubs, and other perches.	**High.** The ruderal grasslsnd throughout the Study Area represent suitable foraging habitat for loggerhead shrike, and the trees and shrubs within the Study Area provide suitable nesting habitat
Mammals				
Antrozous pallidus Pallid bat	--	CSC, WBWG H	Roosts in crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating bark, deciduous trees in riparian areas, and fruit trees in orchards), bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (WBWG 2017).	**High.** Suitable roosting habitat for this species is present in tree hollows and under exfoliating bark on large trees scattered throughout the site.
Lasionycteris noctivagans Silver-haired bat	--	WBWG M	Roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. It forages in open wooded areas near water features.	**High.** Suitable roosting habitat for this species is present in tree hollows and under exfoliating bark on trees scattered throughout the site.

Scientific Name **(Common Name)**	**Federal Status**	**State Status**	**Habitat Requirements**	**Potential for Occurrence**
Lasiurus blossevillii Western red bat	--	CSC, WBWG H	Roosts primarily in the foliage of trees or shrubs (WBWG 2017). Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2017).	**High.** Trees scattered throughout the site are suitable roosting habitat for this species.
Lasiurus cinereus Hoary bat	--	WBWG M	Roosts primarily in foliage of both coniferous and deciduous trees at the edges of clearings (WBWG 2017).	**High.** Trees scattered throughout the site are suitable roosting habitat for this species.
Taxidea taxus American badger	--	CSC	This species prefers dry open fields, grasslands, and pastures.	**No Habitat Present.** The frequency of disking and other human activity would preclude this species' presence.

Status Codes:

CC - CDFW Candidate for Listing
CE - CDFW Endangered
CFP - CDFW Fully Protected
CRPR - California Rare Plant Rank
CSC - CDFW Species of Concern
CT - CDFW Threatened
FE - Federally Endangered
FT - Federally Threatened
WBWG M - Western Bat Working Group Medium Threat Rank
WBWG H - Western Bat Working Group High Threat Rank

5.1 Plants

5.1.1 Dwarf Downingia

Dwarf downingia (*Downingia pusilla*) is not federally or state listed, but it is classified as a CRPR List 1B.2 plant. It is a diminutive annual herb that is strongly associated with vernal pools and other seasonally inundated features at elevations ranging from sea level to approximately 1,500 feet (CNPS 2018). Dwarf downingia is typically associated with areas that experience a moderate degree of disturbance, and it blooms from March to May.

The seasonal wetlands within the Study Area represent suitable habitat for this species.

5.1.2 Contra Costa Goldfields

Contra Costa goldfields (*Lasthenia conjugens*) is federally endangered and a CRPR List 1B.1 plant. Contra Costa goldfields is found in vernal pools, alkaline playas, and other mesic areas in cismontane woodland and valley and foothill grasslands at elevations between sea level and 1,540 feet (CNPS 2018). This annual herb blooms from March through June (CNPS 2018).

The seasonal wetlands within the Study Area represent marginally suitable habitat for this species.

5.1.3 Baker's Navarretia

Baker's navarretia (*Navarretia leucocephala* ssp. *bakeri*) is not federally or state listed, but it is classified as a CRPR List 1B.1 plant. Baker's navarretia is found in vernal pools and other mesic areas in cismontane woodland, lower montane coniferous forest, and valley and foothill grasslands at elevations between 15 and 5,700 feet (CNPS 2017). This annual herb blooms from April through July (CNPS 2018).

The seasonal wetlands represent marginally suitable habitat for this species.

5.1.4 Bearded Popcorn Flower

Bearded popcorn flower (*Plagiobothrys hystriculus*) is not federally or state listed, but it is classified as a CRPR List 1B.1 plant. Bearded popcorn flower is found in vernal swales and along the upper edges of vernal pools at elevations between sea level and 900 feet (CNPS 2018). This annual herb blooms from April through May (CNPS 2018).

The seasonal wetlands within the Study Area represent marginally suitable habitat for this species.

5.1.5 Showy Indian Clover

Showy indian clover (*Trifolium amoenum*) is federally endangered and a CRPR list 1B.1 plant. Showy indian clover is found in low wet swales, grasslands, and grassy hillsides up to 1,020 feet in elevation (USFWS 2012). This annual plant blooms from April through June (CNPS 2018).

The seasonal wetlands within the Study Area represent marginally suitable habitat for this species. However, the species is reduced to one native population at Dillon Beach in Marin County, two small experimental populations in Sonoma County, and two experimental populations at Point Reyes National Seashore, Marin County (USFWS 2012), making it highly unlikely to occur on the site.

5.2 Invertebrates

5.2.1 Conservancy Fairy Shrimp

The Conservancy fairy shrimp (*Branchinecta conservatio*) is listed as endangered pursuant to the federal Endangered Species Act. This fairy shrimp is endemic to California, and is found in grasslands in the northerntwo thirds of the Central Valley (Eriksen and Belk 1999). The historic distribution of Conservancy fairy shrimp is not known, but it likely occurred throughout a large portion of the Central Valley and Southern Coastal regions of California (USFWS 2005). Until recently, this species has only been known from a few disjunct populations in California, including four clustered populations in the Vina Plains area in Tehama and Butte Counties, Jepson Prairie Preserve in Solano County, The Sacramento National Wildlife Refuge in Glenn County, the Tule Ranch Unit of the Yolo basin Wildlife Area in Yolo County, the Grasslands Ecological Area in Merced County, one location in Stanislaus County, three locations in the Southern Sierra Foothills Vernal Pool Region, and two locations near the Santa Barbara Vernal Pool Region (USFWS 2003, USFWS 2006). In April of 2007, the USFWS reported that a single Conservancy fairy shrimp in one vernal pool was documented within the Mariner Conservation Bank in Placer County, near the City of Lincoln, California.

The life cycle of Conservancy fairy shrimp is reliant on the ephemeral conditions of its vernal habitat. It inhabits a variety of different landforms and soil types, and is often found in large, turbid pools with low conductivity, total dissolved solids, and alkalinity (USFWS 2005).

The large seasonal wetlands within the Study Area represents marginally suitable habitat for this species. As noted above, the only documented occurrence of this species (and therefore, the nearest documented occurrence) is located over 5 miles to the southeast of the Study Area near Jepson Prairie (CNDDB 2018).

5.2.2 Vernal Pool Fairy Shrimp

The vernal pool fairy shrimp (*Branchinecta lynchi*) is listed as threatened pursuant to the federal Endangered Species Act. Historically, the range of vernal pool fairy shrimp extended throughout the Central Valley of California. Vernal pool fairy shrimp populations have been found in several locations throughout California, with habitat extending from Stillwater Plain in Shasta County through the Central Valley to Pixley in Tulare

County, and along the Central Coast range from northern Solano County to Pinnacles National Monument in San Benito County (Eng *et al.* 1990, Fugate 1992). Additional populations occur in San Luis Obispo, Santa Barbara, and Riverside counties. The historic and current ranges of vernal pool fairy shrimp are very similar in extent; however, the remaining populations are more fragmented and isolated than during historical times (USFWS 2005).

The life cycle of vernal pool fairy shrimp is adapted to seasonally inundated features such as vernal pools, seasonal wetlands, and seasonal wetland swales. Fairy shrimp embryos survive the dry season in cyst form. Cysts "hatch" soon after pools become inundated during the wet season. Fairy shrimp complete their life cycle quickly and feed on small particles of detritus, algae, and bacteria (Eriksen and Belk 1999).

The seasonal wetlands within the Study Area represent suitable habitat for this species. The nearest documented occurrence of vernal pool fairy shrimp is located approximately immediately east of the Study Area across I-505 (**Figure 3**) (CNDDB 2018).

5.2.3 Vernal Pool Tadpole Shrimp

The vernal pool tadpole shrimp (*Lepidurus packardi*) is listed as endangered pursuant to the federal Endangered Species Act. The historic range of the vernal pool tadpole shrimp likely extended throughout the Central Valley of California, and has been documented from east of Redding in Shasta County south to Fresno County, and from the San Francisco Bay Wildlife Refuge in Alameda County. The historic and current ranges of vernal pool tadpole shrimp are very similar in extent; however, the remaining populations are more fragmented and isolated than during historical times (USFWS 2005).

This species is associated with long-duration seasonal pools in grasslands throughout the northern and eastern portions of the Central Valley (USFWS 2005). Suitable vernal pools and seasonal swales are generally underlain by hardpan or sandstone. Much like vernal pool fairy shrimp, vernal pool tadpole shrimp are adapted to seasonally inundated features such as vernal pools, seasonal wetlands, and seasonal wetland swales (USFWS 2005).

The largest seasonal wetlands within the Study Area represents suitable habitat for this species. There are no extant documented occurrences of vernal pool tadpole shrimp within 5 miles of the Study Area (**Figure 3**) (CNDDB 2018). There is one CNDDB occurrence approximately 3 miles south of the Study Area but the CNDDB considers this site to be possibly extirpated (CNDDB 2018).

5.3 Birds

5.3.1 Burrowing Owl

Burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal Endangered Species Acts; however, it is designated as a species of special concern by the CDFW. They typically inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. This species

typically uses burrows created by fossorial mammals, most notably the California ground squirrel, but may also use man-made structures such as culverts; cement, asphalt, or wood debris piles; or openings beneath cement or asphalt pavement (CDFG 1995). The breeding season extends from February 1 through August 31 (CBOC 1993, CDFG 1995).

Although few ground squirrel burrows were observed, these burrows and any debris scattered throughout the Study Area could provide artificial burrows for burrowing owl. The ruderal grasslands provide suitable foraging habitat for this species. There are over 12 documented occurrences of burrowing owl within 5 miles of the Study Area (**Figure 3**) (CNDDB 2018). Two of these occurrences are immediately east and southwest of the Study Area.

5.3.2 Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is a raptor species that is not federally listed, but is listed as threatened by CDFW. Breeding pairs typically nest in tall trees associated with riparian corridors, and forage in grassland, irrigated pasture, and cropland with a high density of rodents (Shuford and Gardali 2008). The Central Valley populations breed and nest in the late spring through early summer before migrating to Central and South America for the winter (Shuford and Gardali 2008).

The annual brome grasslands throughout the Study Area represent suitable foraging habitat for Swainson's hawk, and the trees within the Study Area provide suitable nesting habitat. There are over 60 documented occurrences of Swainson's hawk within 5 miles of the Study Area (**Figure 3**) (CNDDB 2018).

5.3.3 Northern Harrier

The northern harrier *(Circus cyaneus)* is not listed pursuant to either the California or federal Endangered Species Acts; however, it is considered to be a species of special concern by the CDFW. This species is known to nest within the Central Valley, along the Pacific Coast, and in northeastern California (Shuford and Gardali 2008). The northern harrier is a ground nesting species, and typically nests in emergent wetland/marsh, open grasslands, or savannah habitats. Foraging occurs within a variety of open habitats such as marshes, agricultural fields, and grasslands (Shuford and Gardali 2008).

The ruderal grassland and ruderal areas throughout the Study Area are suitable nesting and foraging habitat for this species. Northern harrier has not been documented in the CNDDB within 5 miles of the Study Area (CNDDB 2018).

5.3.4 White-Tailed Kite

White-tailed kite (*Elanus leucurus*) is not federally or state listed, but is a CDFW fully protected species. This species is a yearlong resident in the Central Valley and is primarily found in or near foraging areas such as open grasslands, meadows, farmlands, savannahs, and emergent wetlands (Shuford and Gardali 2008).

White-tailed kites typically nest from March through June in trees within riparian, oak woodland, and savannah habitats of the Central Valley and Coast Range (Shuford and Gardali 2008).

The ruderal grassland throughout the Study Area represent suitable foraging habitat for white-tailed kite, and the trees within the Study Area provide suitable nesting habitat. The nearest documented occurrence of white-tailed kite in the CNDDB is approximately 2 miles southeast of the Study Area (**Figure 3**) (CNDDB 2018).

5.3.5 Loggerhead Shrike

The loggerhead shrike *(Lanius ludovicianus)* is not listed and protected pursuant to either the California or federal Endangered Species Acts; but is a CDFW species of special concern. Loggerhead shrikes nest in small trees and shrubs in woodland and savannah vegetation communities, and forage in open habitats throughout California (Shuford and Gardali 2008). The nesting season ranges from March through June.

The trees, shrubs and ruderal grassland within the Study Area provide suitable habitat for loggerhead shrike. Loggerhead shrike has not been documented in the CNDDB within 5 miles of the Study Area (CNDDB 2018).

5.4 Mammals

5.4.1 Pallid Bat

Pallid bat (*Antrozous pallidus*) is not federally or state listed, but is considered a CDFW species of special concern, and is classified by the WBWG as a High priority species. It favors roosting sites in crevices in rock outcrops, caves, abandoned mines, hollow trees, and human-made structures such as barns, attics, and sheds (WBWG 2018). Though pallid bats are gregarious, they tend to group in smaller colonies of 10 to 100 individuals. It is a nocturnal hunter and captures prey in flight, but unlike most American bats, the species has been observed foraging for flightless insects, which it seizes after landing (WBWG 2018).

Tree hollows and exfoliating bark on trees throughout the Study Area, and any buildings within the Study Area represent potential roosting habitat for pallid bat. Pallid bat has not been documented in the CNDDB within 5 miles of the Study Area (CNDDB 2018).

5.4.2 Silver-Haired Bat

Silver-haired bat (*Lasionycteris noctivagans*) is not federally or state listed, but is classified by the WBWG as a Medium priority species. Primarily considered a coastal and montane forest species, the silver-haired bat occurs in more xeric environments during winter and seasonal migrations (WBWG 2018). It roosts in abandoned woodpecker holes, under bark, and occasionally in rock crevices. This insectivore's favored foraging sites include open wooded areas near water features (WBWG 2018).

Tree hollows and exfoliating bark on trees throughout the Study Area represent suitable roosting habitat for silver-haired bat. Silver-haired bat has not been documented in the CNDDB within 5 miles of the Study Area (CNDDB 2018).

5.4.3 Western Red Bat

Western red bat (*Lasiurus blossevillii*) is not federally or state listed, but is considered a CDFW species of special concern, and is classified by the WBWG as a High priority species. Western red bat is typically solitary, roosting primarily in the foliage of trees or shrubs (WBWG 2018). Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas. There may be an association with intact riparian habitat (particularly willows, cottonwoods, and sycamores) (WBWG 2018).

Tree hollows and exfoliating bark on trees throughout the Study Area represent suitable roosting habitat for western red bat. Western red bat has not been documented in the CNDDB within 5 miles of the Study Area (CNDDB 2018).

5.4.4 Hoary Bat

The hoary bat (*Lasiurus cinereus*) is not federally or state listed, but is classified by the WBWG as a Medium priority species. It is considered to be one of the most widespread of all American bats with a range extending from Canada to central Chile and Argentina as well as Hawaii (WBWG 2018). Hoary bats are solitary and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches at the edge of a clearing (WBWG 2018). This species may also occasionally roost in caves, beneath a rock ledge, in a woodpecker hole, in a grey squirrel nest, under a wood plank, or clinging to the side of a building (WBWG 2017).

Tree hollows and exfoliating bark on trees and buildings within the Study Area represent suitable roosting habitat for hoary bat. Hoary bat has not been documented in the CNDDB within 5 miles of the Study Area (CNDDB 2018).

6.0 IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

This section details potential impacts to the biological resources discussed above associated with construction of the project, as discussed in **Section 1.1** and shown in **Attachment A**.

6.1 Aquatic Resources

0.500 acre of non-jurisdictional canal will be permanently impacted by the project.

Of the approximately 1.136 acres of jurisdictional aquatic resources mapped within the Study Area, 0.353 acre will be impacted by the Project and 0.783 acre will be avoided (**Table 3** and **Attachment F**).

Table 3. Aquatic Resources Impacts and Avoidance within the Study Area

Aquatic Resource Type	Impacted Acreage	Avoided Acreage	Total Acreage Within Study Area
Seasonal Wetland	0.187	0.000	0.187
Drainage Ditch	0.010	0.000	0.010
Intermittent Drainage	0.171	0.663	0.940
Jurisdictional Subtotal	**0.368**	**0.663**	**1.136**
Non-Jurisdictional Canal	0.500	0.000	0.500
Total	**0.868**	**0.663**	**1.637**

6.2 Special-Status Plant Species

The vegetation communities proposed for impact represent suitable habitat for five special-status plant species. Protocol-level special-status plant surveys have not been conducted throughout the Study Area, and are planned to take place in 2018. The disturbed nature of the Study Area reduces the likelihood of special-status plants to be present and no impacts to special-status plant species are anticipated.

6.3 Vernal Pool Branchiopods

Several of the seasonal wetlands within the Study Area represent suitable habitat for vernal pool branchiopods. Protocol-level dry season surveys for vernal pool branchiopods have been completed and wet season surveys for vernal pool branchiopods are currently being conducted for the Study Area. No vernal pool branchiopods have been found within the Study Area to date and it is anticipated that there will be no impacts to vernal pool branchiopods.

6.4 Nesting Raptors and Songbirds

Swainson's hawk, white-tailed kite, northern harrier, and loggerhead shrike have the potential to nest on-site, as do other more common bird species protected by the MBTA. If they were nesting on-site, removal of the nests would impact these species. Furthermore, birds nesting in avoided areas adjacent to construction could be disturbed by construction, which could result in nest abandonment and failure.

6.5 Foraging Raptors

The ruderal grassland within the Study Area provide suitable foraging habitat for Swainson's hawk, white-tailed kite, northern harrier, and other more common raptors. Approximately 45.67 acres of ruderal grassland will be impacted during Project implementation (**Attachment F**).

6.6 Burrowing Owl

The ruderal grassland and spoils piles throughout the Study Area provides suitable foraging habitat for burrowing owl, and occasional ground-squirrel burrows and debris throughout the Study Area provide marginally suitable nesting habitat. If ground disturbance occurred while burrowing owls were in burrows, individuals of this species could be killed.

6.7 Roosting Bats

Trees and buildings throughout the Study Area are habitat for various special-status bats species. If special-status bats were roosting in trees or buildings to be removed by Project construction, they could be injured or killed when the trees are cut down or buildings demolished.

7.0 MITIGATION FOR IMPACTS TO SENSITIVE BIOLOGICAL RESOURCES

The following are mitigation measures that are often required by CEQA lead agencies for impacts to sensitive biological resources that may be associated with construction of the project.

7.1 Aquatic Resources

1. The Project applicant shall apply for a Section 404 permit from the U.S. Army Corps of Engineers. Waters that will be impacted shall be replaced or rehabilitated on a "no-net-loss" basis. Habitat restoration, rehabilitation, and/or replacement shall be at a location and by methods acceptable to the USACE.
2. The applicant shall apply for a Section 401 water quality certification from the RWQCB, and adhere to the certification conditions.
3. The applicant shall apply for a Section 1600 Lake or Streambed Alteration Agreement from CDFW, and if CDFW determines that an agreement is needed, the applicant shall adhere to the agreement conditions.

7.2 Special-Status Plant Species

Special-status plant surveys shall be conducted prior to commencement of construction. If no special-status plant species are found, no further mitigation would be required. If special-status plants are found and will be impacted, mitigation for those impacts will be determined during consultation with the City. If the plant found is federally endangered such as Contra Costa goldfields or showy indian clover, ESA Section 7 coverage (a Biological Opinion) will need to be acquired from the USFWS prior to construction. Mitigation for federally-listed species and conservation measures detailed in the USFWS Biological Opinion will be implemented. If the plant found is a non-listed annual such as Baker's navarretia, bearded popcorn flower, or dwarf downingia, then mitigation could consist of collecting seed-bearing soil and spreading into a suitable constructed wetland at a mitigation site.

7.3 Vernal Pool Branchiopods

Dry season surveys for vernal pool branchiopods have been completed and wet season surveys for vernal pool branchiopods are currently being conducted. To date no vernal pool branchiopods have been identified within the Study Area. For those areas of potential habitat that are determined not to be occupied by federally listed vernal pool branchiopods, no further mitigation would be required. If federally listed vernal pool branchiopods are found during the remaining surveys, removal of that habitat shall be mitigated through the preservation of vernal pool branchiopod habitat at USFWS-approved ratios at a USFWS-approved mitigation bank. Alternatively, the project applicant may assume that all potential vernal pool branchiopod habitat is occupied and mitigate as described above.

7.4 Nesting Raptors and Other Birds

If ground disturbance, vegetation thinning, or other construction activities are proposed during the bird nesting season (February 1 – August 31), a focused survey for nesting raptors (including burrowing owls and Swainson's hawk) and migratory bird nests shall be conducted by a qualified biologist within 15 days prior to the beginning of construction activities in order to identify active nests. This survey shall be conducted within the proposed construction area and all accessible areas within 500 feet of the construction area. In addition to the nesting bird surveys, a targeted Swainson's hawk nest survey shall be conducted within the construction area and all accessible areas within ¼ mile of the proposed construction area.

If active raptor nests are found, no construction activities shall take place within 500 feet of the nest until the young have fledged and if active songbird nests are found, a 100-foot no disturbance buffer will be established. These no-disturbance buffers may be reduced based on approval by the City. The perimeter of the protected area shall be indicated by bright orange temporary fencing. No construction activities or personnel shall enter the protected area, except with approval of the biologist. If tree removal is necessary, trees containing nests, must be removed during the nonbreeding season (late September to March). If no active nests are found during the focused survey, no further mitigation will be required. If a lapse in project-related construction work of 15 days or longer occurs during the nesting season, additional pre-construction surveys shall be required before project work may be reinitiated.

7.5 Burrowing Owl

If burrowing owls are identified during the pre-construction surveys the following measures will be implemented:

- If work occurs during the non-breeding season (September 1 through January 31), a circular exclusion zone with a radius of 160 feet shall be established around occupied burrows. If a buffer cannot be established (except as provided below), burrowing owls shall be evicted from the entire construction area using passive relocation techniques. One-way doors shall be installed in all suitable burrows, left in place for a minimum of 48 hours, and monitored daily to evaluate owl exclusion and to ensure doors are functioning properly. Burrows shall then be excavated, using

hand tools whenever possible, and refilled to prevent reoccupation. Sections of flexible plastic pipe shall be inserted into burrows during excavation to maintain an escape route for any animals inside the burrow.

- If work occurs during the breeding season (February 1 through August 31), a qualified biologist shall establish a circular exclusion zone with a radius of 250 feet around each occupied burrow. No construction-related activity (e.g., site grading, staking, surveying, any use of construction equipment) shall occur in the exclusion zone during the breeding season. Once the breeding season is over, passive relocation may proceed as described above.
- Construction buffer radii may be reduced from the 250-foot breeding season buffer and 160-foot non-breeding season buffer in accordance with the following requirements:
    - A site-specific analysis prepared by a qualified biologist indicates that the nesting pair(s) or wintering owl(s) would not be adversely affected by construction activities. The City must approve this analysis in writing before construction can proceed.
    - Monitoring by a qualified biologist is conducted for a sufficient time (during all construction activities for a minimum of 10 consecutive days following the initiation of construction), the nesting pair does not exhibit adverse reactions to construction activities (e.g., changes in behavioral patterns, reactions to noise), and the burrows are not in danger of collapse due to equipment traffic.
    - Monitoring is continued at least once a week through the nesting/wintering cycle at that site, and no change in behavior by the owls is observed. This long-term monitoring may be reduced to a minimum of 2 hours in the morning and 2 hours in the afternoon during construction activities; however, additional and more frequent monitoring may be required if any adverse reactions are noted.
    - Monitoring reports are submitted to the City.

7.6 Nesting Swainson's Hawk

If active Swainson's hawk nests are identified during the pre-construction surveys the following measures will be implemented:

- Construction shall cease within ¼ mile of the nest until a qualified biologist determines that the young have fledged or it is determined that the nest is no longer active. If the applicant desires to work within ¼ mile of the nest, the applicant shall consult with the City to determine if the nest buffer can be reduced. The buffer may only be reduced under the following conditions:
- A site-specific analysis prepared by a qualified biologist indicates that the nesting pair under consideration are not likely to be adversely affected by construction activities (e.g., the nest is located in an area where the hawks are habituated to human activity and noise levels comparable to anticipated construction work). The City, must approve this analysis before construction may begin within 0.25 mi of a nest.
- Monitoring by a qualified biologist is conducted for a sufficient time (during all construction activities for a minimum of 10 consecutive days following the initiation of construction), and the nesting pair does not exhibit adverse reactions to construction activities (e.g., changes in behavioral patterns, reactions to construction noise).

- Monitoring is continued at least once a week through the nesting cycle at that nest. This long-term monitoring may be reduced to a minimum of 2 hours in the morning and 2 hours in the afternoon during construction activities; however, additional and more frequent monitoring may be required if any adverse reactions are noted.
- Monitoring reports are submitted to the City.

If a nest tree becomes occupied by Swainson's hawk during ongoing construction activities, construction activities shall not occur within 500 ft of the nest, except where monitoring consistent with the criteria in the above measures documents that adverse effects will not occur.

7.7 Swainson's Hawk Foraging Habitat

Approximately 45.67 acres of ruderal grassland that represents suitable foraging habitat for Swainson's hawks will be permanently impacted during construction of the proposed Project (**Attachment F**). These impacts shall be mitigated through purchase and conservation of similar habitat as follows:

A qualified biologist shall conduct a review of Swainson's hawk nest data available in the CNDDB to determine if any nests are located within 10 miles of the project. If it is determined that the project site is within 10 miles of an active Swainson's hawk nest (an active nest is defined as a nest with documented Swainson's hawk use within the past 5 years), the applicant shall mitigate for the loss of suitable Swainson's hawk foraging habitat by implementing one of the below measures:

- Active nest identified within 1 mile of the project site: One acre of suitable foraging habitat shall be protected for each acre of suitable foraging habitat developed. Protection shall be via purchase of mitigation bank credits or other land protection mechanism acceptable to the City.
- Active nest identified within 5 miles (but greater than 1 mile) of the project site: 0.75 acre of suitable foraging habitat shall be protected for each acre of suitable foraging habitat developed. Protection shall be via purchase of mitigation bank credits or other land protection mechanism acceptable to the City.
- Active nest identified within 10 miles (but greater than 5 miles) of the project site: 0.5 acre of suitable foraging habitat shall be protected for each acre of suitable foraging habitat developed. Protection shall be via purchase of mitigation bank credits or other land protection mechanism acceptable to the City.

7.8 Roosting Bats

Pre-construction roosting bat surveys shall be conducted by a qualified biologist within 14 days prior to any tree or building removal that will occur during the breeding season (April through August). If pre-construction surveys indicate that no roosts of special-status bats are present, or that roosts are inactive or potential habitat is unoccupied, no further mitigation is required. If roosting bats are found, exclusion shall be conducted as recommended by a qualified bat biologist. Once the bats have been excluded, tree or building removal may occur. If the exclusion actions are not successful, a qualified biologist in possession

of an applicable CDFW Memorandum of Understanding shall consult with CDFW to determine appropriate relocation methods.

7.9 Solano Multi-Species Habitat Conservation Plan

Because the HCP has not been adopted to date, coverage for take of listed species will be conducted conventionally if any impacts to listed species occur. However, avoidance measures for Swainson's hawk and burrowing owl in the draft HCP was reviewed for consistency with the avoidance and minimization measures proposed for the Project.

7.10 Worker Environmental Awareness Training

Prior to any ground-disturbing or vegetation-removal activities, a Worker Environmental Awareness Training (WEAT) shall be prepared and administered to the construction crews. The WEAT will include the following: discussion of the state and federal Endangered Species Act, the Clean Water Act, the Project's permits and CEQA documentation, and associated mitigation measures; consequences and penalties for violation or noncompliance with these laws and regulations; identification of special-status wildlife, location of any avoided Waters of the U.S; hazardous substance spill prevention and containment measures; and the contact person in the event of the discovery of a special-status wildlife species. The WEAT will also discuss the different habitats used by the species' different life stages and the annual timing of these life stages. A handout summarizing the WEAT information shall be provided to workers to keep on-site for future reference. Upon completion of the WEAT training, workers will sign a form stating that they attended the training, understand the information presented and will comply with the regulations discussed. Workers will be shown designated "avoidance areas" during the WEAT training; worker access should be restricted to outside of those areas to minimize the potential for inadvertent environmental impacts. Fencing and signage around the boundary of avoidance areas may be helpful.

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Figures

Figure 1. Site and Vicinity Map

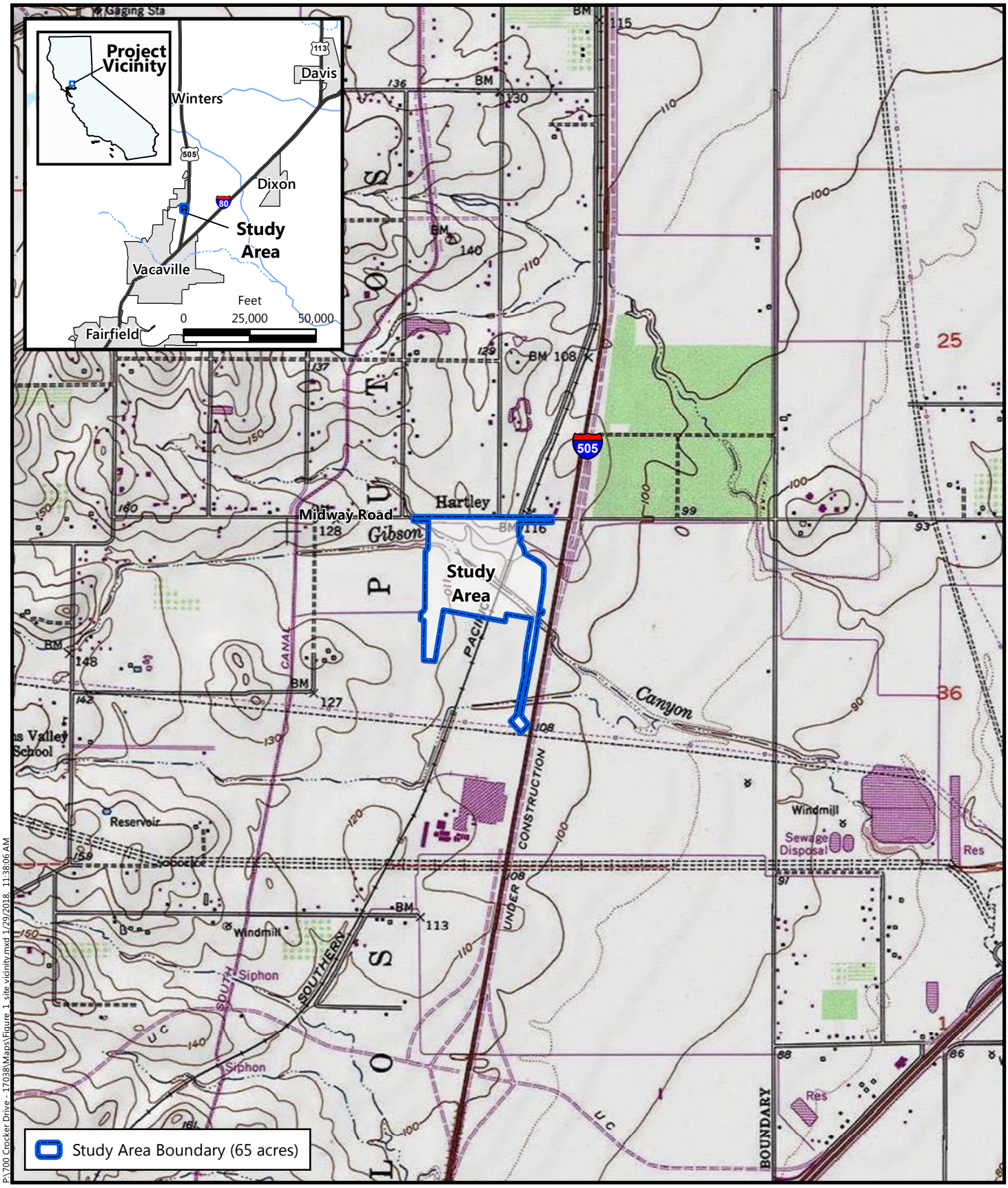
Figure 2. California Natural Diversity Database Occurrences of Plant Species

Figure 3. California Natural Diversity Database Occurrence of Wildlife Species

Figure 4. Aquatic Resources Delineation Map

Figure 5. Vegetation Communties Map

Figure 6. NRCS Soils Map



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Source: United States Geologic Survey, 2013.
Rancho Los Putos Civil Land Grant
Township 7 North, Range 1 West, MDB&M
"Allendale, California" 7.5-Minute Topographic Quadrangle
Longitude -121.949111, Latitude 38.41455

Figure 1
Site and Vicinity

700 Crocker Drive
City of Vacaville, Solano County, California

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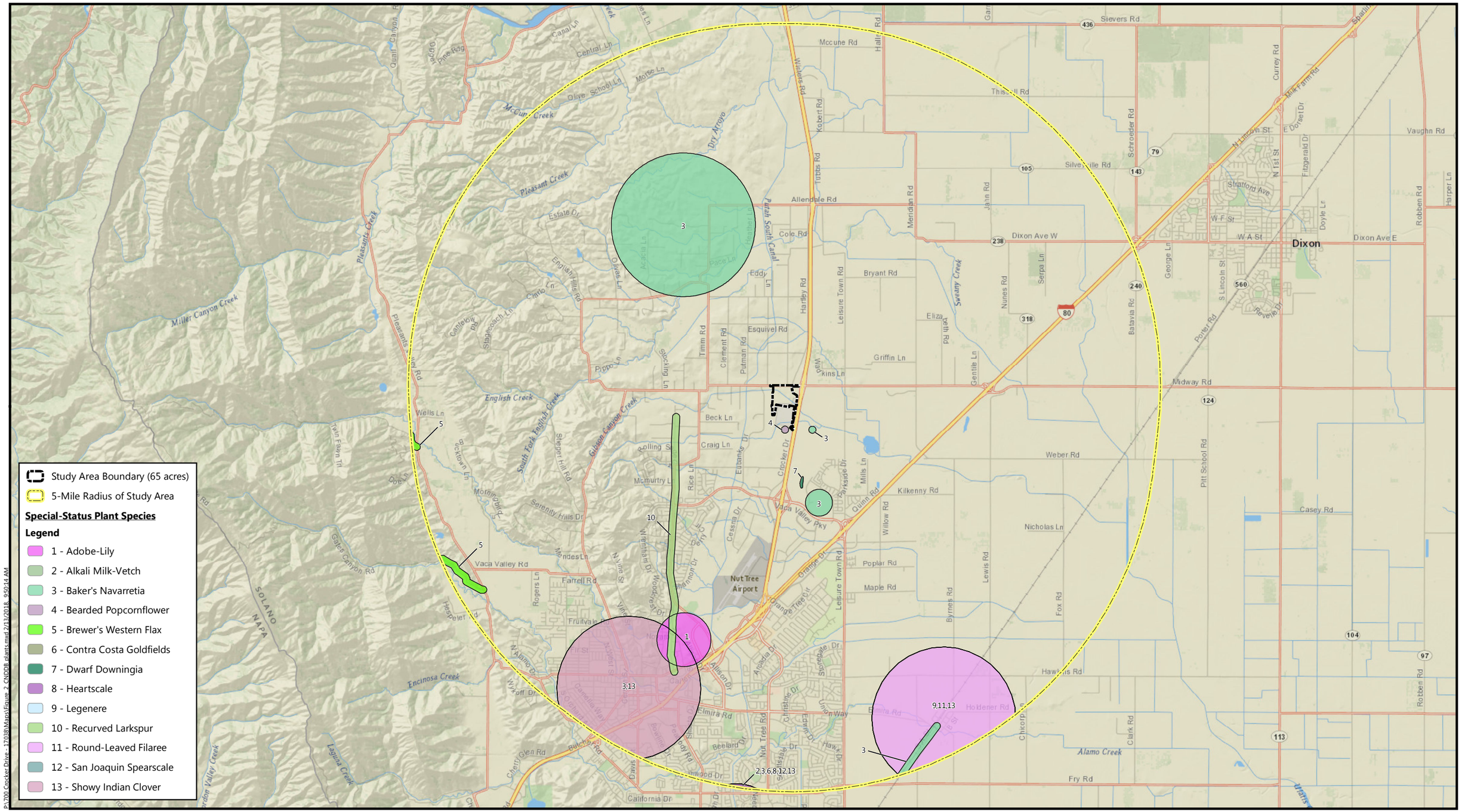

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Source: *California Department of Fish and Wildlife*, February 2018.
Basemap Source: *National Geographic* and *ESRI*

Figure 2
California Natural Diversity Database Occurrences of Plant Species

700 Crocker Drive
City of Vacaville, Solano County, California

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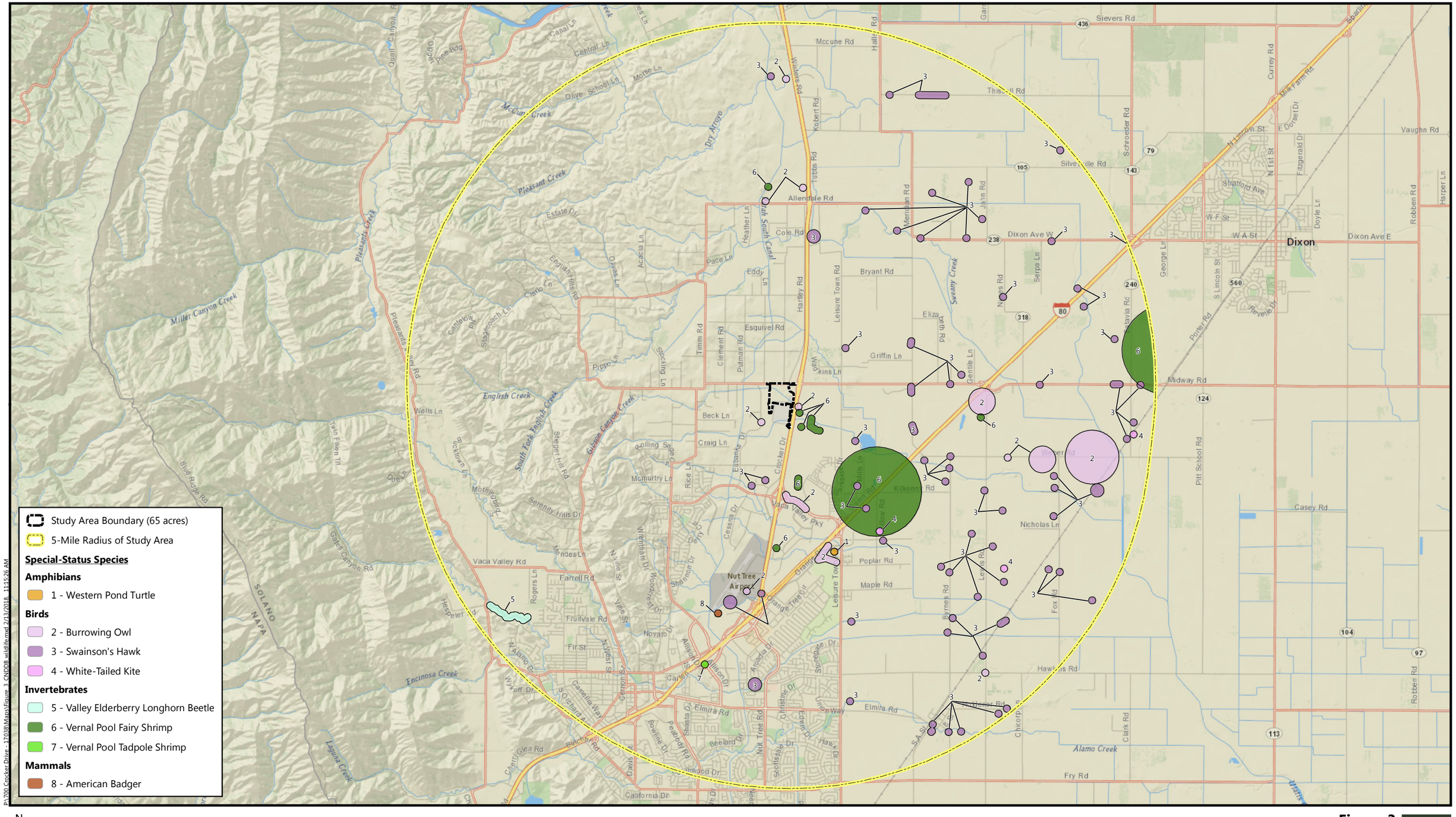

Source: *California Department of Fish and Wildlife*, February 2018.
Basemap Source: *National Geographic* and *ESRI*

Figure 3
California Natural Diversity Database Occurrences of Wildlife Species

700 Crocker Drive
City of Vacaville, Solano County, California

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Figure 4
Aquatic Resources

700 Crocker Drive
City of Vacaville, Solano County, California

Aerial Source: *USDA, National Agriculture Imagery Program,* 8 July 2016

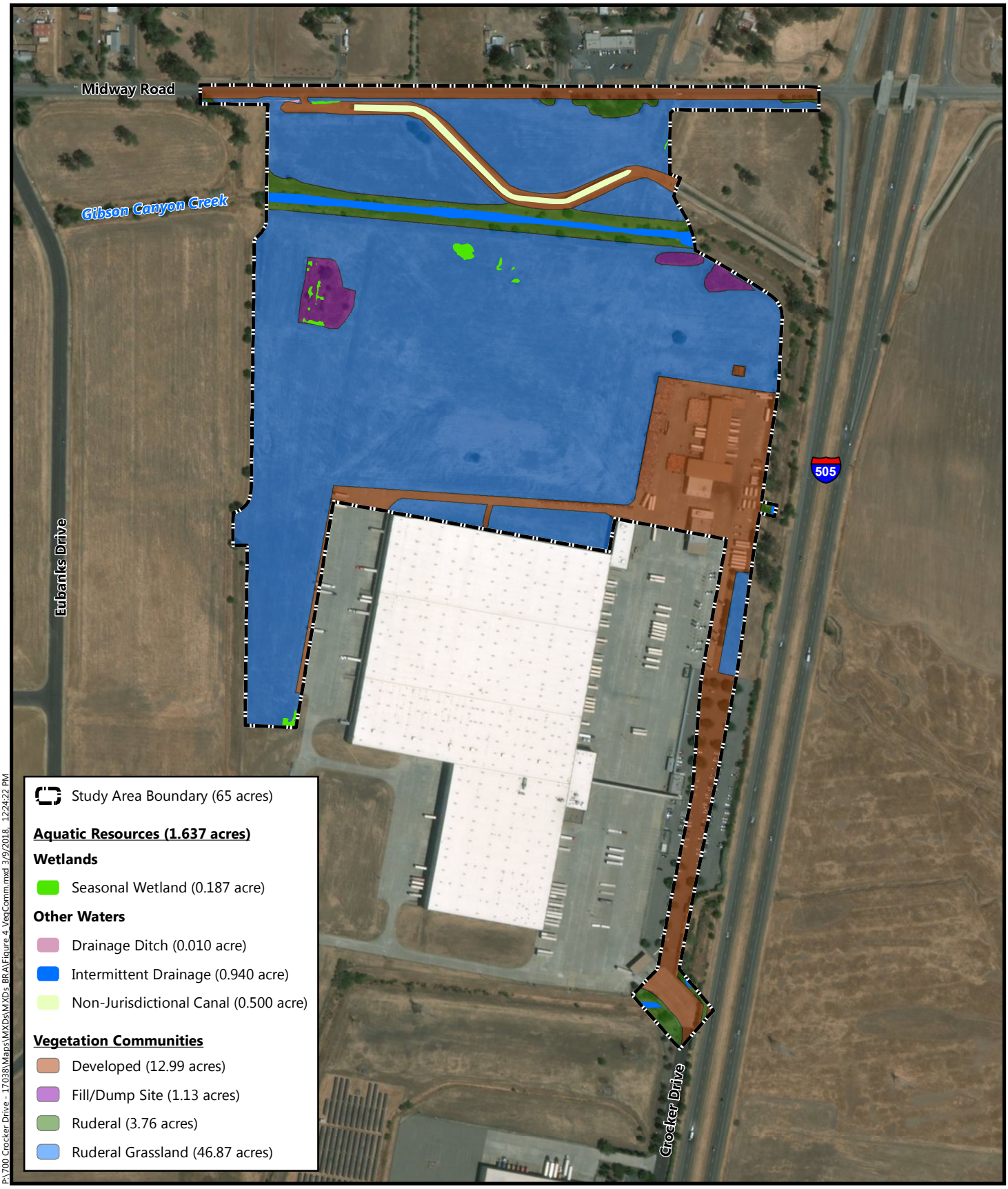

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Figure 5
Vegetation Communities

700 Crocker Drive
City of Vacaville, Solano County, California

Aerial Source: *USDA, National Agriculture Imagery Program,* 8 July 2016

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Soil Survey Source: *USDA, Soil Conservation Service.*
Soil Survey Geographic (SSURGO) database for Solano County, California
Aerial Source: *USDA, National Agriculture Imagery Program,* 8 July 2016.

Figure 6
Natural Resources Conservation Service Soils

700 Crocker Drive
City of Vacaville, Solano County, California

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Attachments

Attachment A. 700 Crocker Illustrative Site Plan

Attachment B. California Natural Diversity Database Species List for "Allendale, California" USGS Quadrangle

Attachment C. IPaC Trust Resource Report for the Study Area

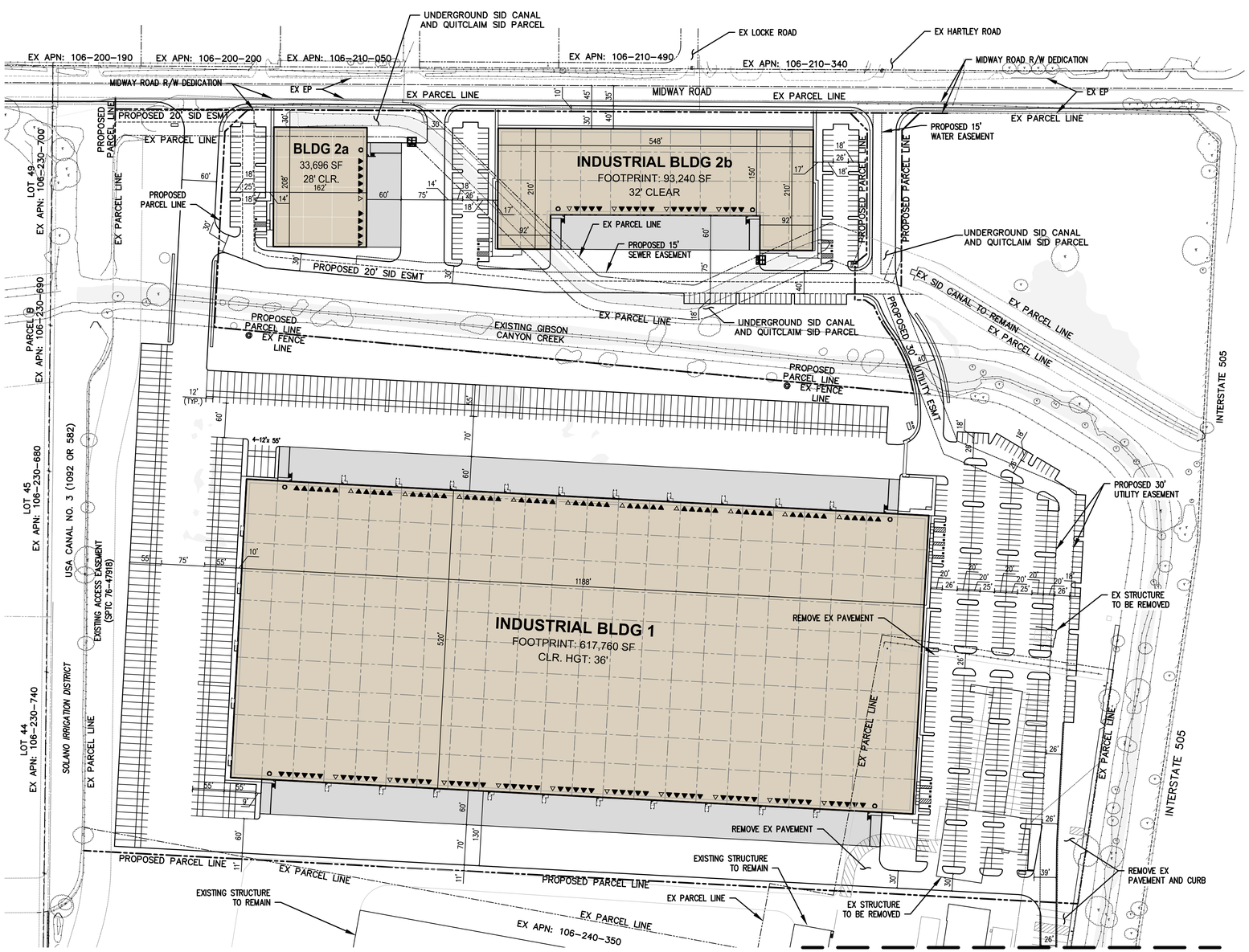
Attachment D. CNPS Inventory of Rare and Endangered Plants Query for the "Allendale, California" USGS Quadrangle and Eight Surrounding Quadrangles

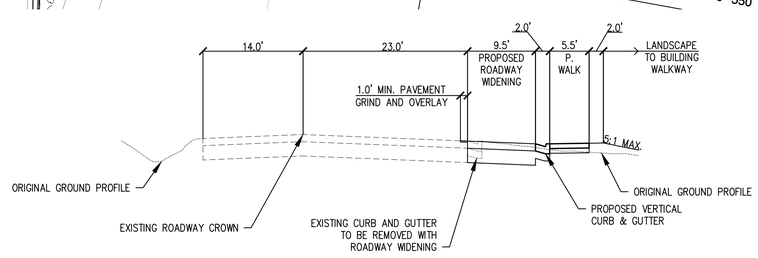
Attachment E. Wildlife List

Attachment F. Aquatic Resources and Vegetation Communities Impacts

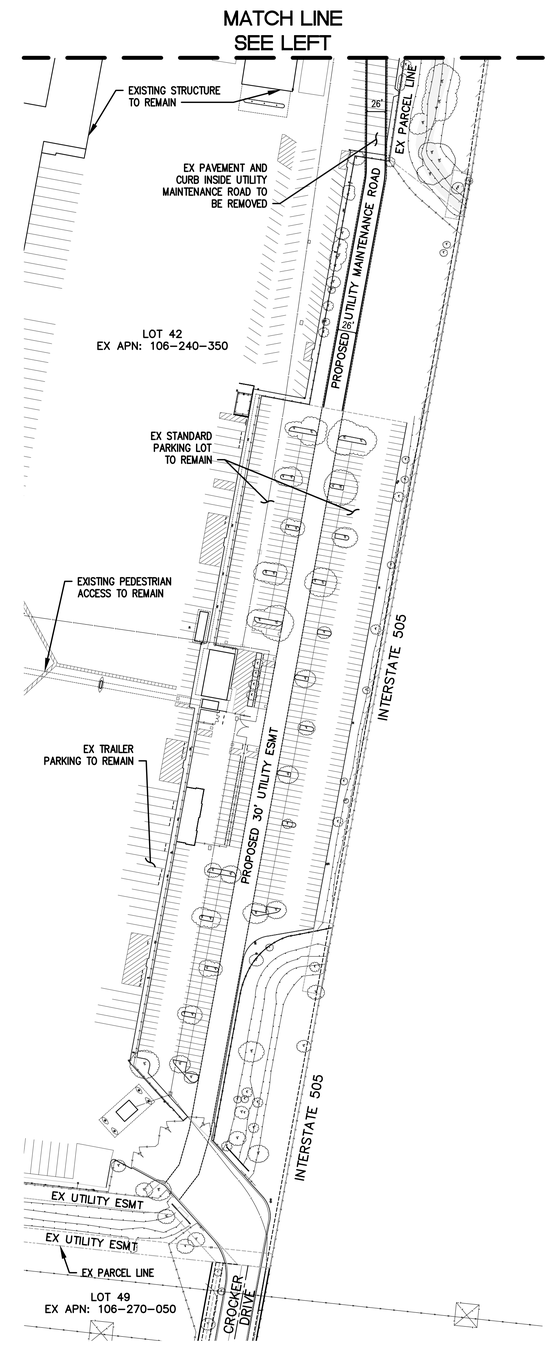
Attachment A

700 Crocker Illustrative Site Plan





PROPOSED WIDENING AT EXISTING MIDWAY ROAD DETAIL



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SCALE: 1"=100'

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DESIGNED BY: DB
DRAFTED BY: CDL
CHECKED BY: VB

PRELIMINARY

PROJECT NAME/LOCATION:
MIDWAY ROAD WAREHOUSES
LDK VENTURES
VACAVILLE CA

DRAWING TITLE:
SITE PLAN

REVISIONS: NO.	DESCRIPTION	DATE

DRAWING FILE: 20170720 C3-SITE

ISSUE DATE: 01/24/2018
PROJECT NO.: 20170720
SHEET NO.: C3 OF 6

Attachment B

California Natural Diversity Database Species List for "Allendale, California" USGS Quadrangle

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Allendale (3812148))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Branchinecta lynchi vernal pool fairy shrimp	ICBRA03030	Threatened	None	G3	S3	
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
Delphinium recurvatum recurved larkspur	PDRAN0B1J0	None	None	G2?	S2?	1B.2
Downingia pusilla dwarf downingia	PDCAM060C0	None	None	GU	S2	2B.2
Elanus leucurus white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Linderiella occidentalis California linderiella	ICBRA06010	None	None	G2G3	S2S3	
Navarretia leucocephala ssp. bakeri Baker's navarretia	PDPLM0C0E1	None	None	G4T2	S2	1B.1
Plagiobothrys hystriculus bearded popcornflower	PDBOR0V0H0	None	None	G2	S2	1B.1

Record Count: 10

Attachment C

IPaC Trust Resource Report for the Study Area

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: February 09, 2018
Consultation Code: 08ESMF00-2018-SLI-1159
Event Code: 08ESMF00-2018-E-03387
Project Name: 700 Crocker

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2018-SLI-1159

Event Code: 08ESMF00-2018-E-03387

Project Name: 700 Crocker

Project Type: DEVELOPMENT

Project Description: Commercial Development

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.41261776661659N121.94902875888567W

Counties: Solano, CA

Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Reptiles

NAME	STATUS
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander *Ambystoma californiense* Population: U.S.A. (Central CA DPS) There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850 Habitat assessment guidelines: https://ecos.fws.gov/ipac/guideline/assessment/population/436/office/11420.pdf	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Attachment D

CNPS Inventory of Rare and Endangered Plants Query for the "Allendale, California" USGS Quadrangle and Eight Surrounding Quadrangles

CNPS California Native Plant Society

Plant List

Inventory of Rare and Endangered Plants

46 matches found. *Click on scientific name for details*

Search Criteria

California Rare Plant Rank is one of [1A, 1B, 2B, 3, 4], Found in Quads 3812251, 3812158, 3812157, 3812241, 3812148, 3812147, 3812231 3812138 and 3812137;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Arabis modesta	modest rockcress	Brassicaceae	perennial herb	Mar-Jul	4.3	S3	G3
Astragalus tener var. ferrisiae	Ferris' milk-vetch	Fabaceae	annual herb	Apr-May	1B.1	S1	G2T1
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S2	G2T2
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun,Aug,Sep,Oct	1B.2	S2	G2
Calochortus pulchellus	Mt. Diablo fairy-lantern	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2	G2
Centromadia parryi ssp. parryi	pappose tarplant	Asteraceae	annual herb	May-Nov	1B.2	S2	G3T2
Centromadia parryi ssp. rudis	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	4.2	S3	G3T3
Chloropyron molle ssp. hispidum	hispid bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	1B.1	S1	G2T1
Cicuta maculata var. bolanderi	Bolander's water-hemlock	Apiaceae	perennial herb	Jul-Sep	2B.1	S2	G5T4
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Downingia pusilla	dwarf downingia	Campanulaceae	annual herb	Mar-May	2B.2	S2	GU
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
	adobe-lily	Liliaceae		Feb-Apr	1B.2	S2S3	G2G3

Fritillaria pluriflora			perennial bulbiferous herb				
Gilia capitata ssp. tomentosa	woolly-headed gilia	Polemoniaceae	annual herb	May-Jul	1B.1	S1	G5T1
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	1B.2	S2	G2
Hesperolinon breweri	Brewer's western flax	Linaceae	annual herb	May-Jul	1B.2	S2?	G2?
Hibiscus lasiocarpos var. occidentalis	woolly rose-mallow	Malvaceae	perennial rhizomatous herb (emergent)	Jun-Sep	1B.2	S3	G5T3
Isocoma arguta	Carquinez goldenbush	Asteraceae	perennial shrub	Aug-Dec	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Lasthenia ferrisiae	Ferris' goldfields	Asteraceae	annual herb	Feb-May	4.2	S3	G3
Lathyrus jepsonii var. jepsonii	Delta tule pea	Fabaceae	perennial herb	May-Jul(Aug-Sep)	1B.2	S2	G5T2
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	1B.2	S2	G2
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	1B.1	S2	G2
Lepidium latipes var. heckardii	Heckard's pepper-grass	Brassicaceae	annual herb	Mar-May	1B.2	S1	G4T1
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	Mar-May	1B.2	S3	G3
Lilaeopsis masonii	Mason's lilaeopsis	Apiaceae	perennial rhizomatous herb	Apr-Nov	1B.1	S2	G2
Limosella australis	Delta mudwort	Scrophulariaceae	perennial stoloniferous herb	May-Aug	2B.1	S2	G4G5
Malacothamnus helleri	Heller's bush-mallow	Malvaceae	perennial deciduous shrub	May-Jul	3.3	S3	G3Q
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Navarretia leucocephala ssp. bakeri	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G4T2
Neostapfia colusana	Colusa grass	Poaceae	annual herb	May-Aug	1B.1	S1	G1
Orcuttia inaequalis	San Joaquin Valley Orcutt grass	Poaceae	annual herb	Apr-Sep	1B.1	S1	G1
Perideridia gairdneri ssp. gairdneri	Gairdner's yampah	Apiaceae	perennial herb	Jun-Oct	4.2	S4	G5T4
Plagiobothrys hystriculus	bearded popcornflower	Boraginaceae	annual herb	Apr-May	1B.1	S2	G2

Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	1B.1	S2	G2
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S3	G5T5
Symphyotrichum lentum	Suisun Marsh aster	Asteraceae	perennial rhizomatous herb	(Apr)May-Nov	1B.2	S2	G2
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Tuctoria mucronata	Crampton's tuctoria or Solano grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
Viburnum ellipticum	oval-leaved viburnum	Adoxaceae	perennial deciduous shrub	May-Jun	2B.3	S3?	G4G5

Suggested Citation

California Native Plant Society, Rare Plant Program. 2018. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 09 February 2018].

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Attachment E

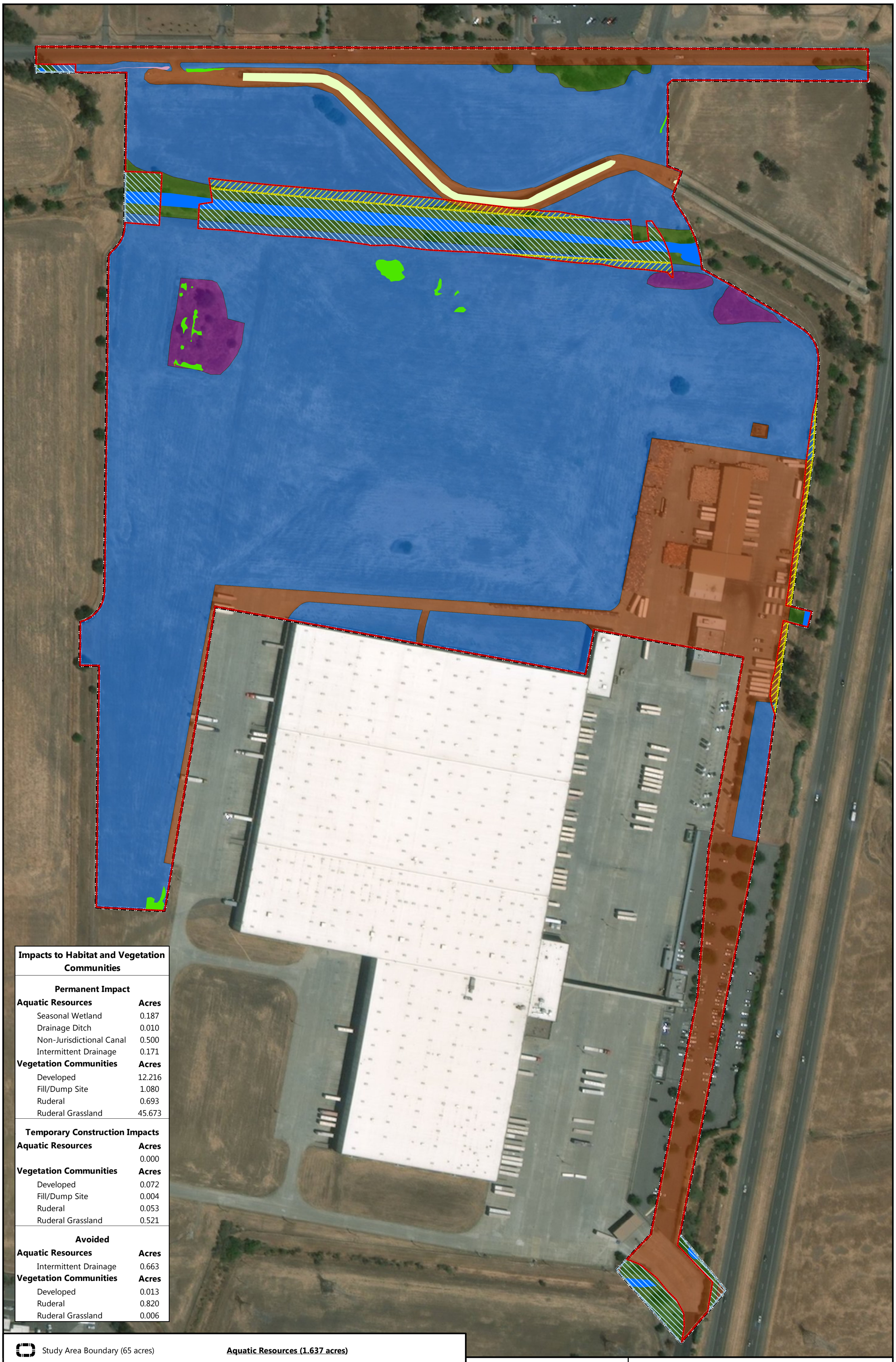
Wildlife List

Wildlife Species Observed within the
700 Crocker Study Area
during 2017 and 2018 Field Surveys

Species Name	Common name
Birds	
Buteo jamaicensis	Red-tailed hawk
Sayornis nigricans	Black phoebe
Mimus polyglottos	Northern mockingbird
Euphagus cyanocephalus	Brewer's blackbird
Mammals	
Lepus californicus	Black-tailed jackrabbit
Fish	
Gasterosteus aculeatus microcephalus	Inland threespine stickleback

Attachment F

Aquatic Resources and Vegetation Communities Impacts



Impacts to Habitat and Vegetation Communities	
Permanent Impact	
Aquatic Resources	**Acres**
Seasonal Wetland	0.187
Drainage Ditch	0.010
Non-Jurisdictional Canal	0.500
Intermittent Drainage	0.171
Vegetation Communities	**Acres**
Developed	12.216
Fill/Dump Site	1.080
Ruderal	0.693
Ruderal Grassland	45.673
Temporary Construction Impacts	
Aquatic Resources	**Acres**
	0.000
Vegetation Communities	**Acres**
Developed	0.072
Fill/Dump Site	0.004
Ruderal	0.053
Ruderal Grassland	0.521
Avoided	
Aquatic Resources	**Acres**
Intermittent Drainage	0.663
Vegetation Communities	**Acres**
Developed	0.013
Ruderal	0.820
Ruderal Grassland	0.006

Study Area Boundary (65 acres)

Impacts to Habitat and Vegetation Communities

- Permanent Impact (60.528 acres)
- Temporary Construction Impact (0.828 acre)
- Avoided (3.395 acres)

Vegetation Communities

- Developed (12.99 acres)
- Fill/Dump Site (1.13 acres)
- Ruderal (3.76 acres)
- Ruderal Grassland (46.87 acres)

Aquatic Resources (1.637 acres)

Wetlands

- Seasonal Wetland (0.187 acre)

Other Waters

- Drainage Ditch (0.010 acre)
- Intermittent Drainage (0.940 acre)
- Non-Jurisdictional Canal (0.500 acre)

N

0 75 150 300

Feet

Aerial Base: USDA, National Agriculture Imagery Program, 8 July 2016

Impact Map

700 Crocker Drive

City of Vacaville, Solano County, California

MADRONE ECOLOGICAL CONSULTING
8421 Auburn Boulevard, Suite 248
Citrus Heights, California 95610
(916) 822.3220 | www.madroneeco.com

2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report

700 Crocker Drive

(2018-TA-0713)

Solano County, California
20 June 2018

MADRONE ECOLOGICAL CONSULTING

Prepared for:
LDK Ventures
3140 Peacekeeper Way
McClellan, CA 95652

Recommended Citation:
Madrone Ecological Consulting, Inc. (Madrone). 2018. *2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report, 700 Crocker Drive (2018-TA-0713)*. Prepared for LDK Ventures. Published on 20 June 2018.

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Figure 1. Site and Vicinity
Figure 2. Sampling Locations
Figure 3. Natural Resources Conservation Service Soils

Table 1

Table 1. Hydric Rating of Soils within the Study Area

Attachments

Attachment A. Dry-Season Lab Data Sheet
Attachment B. Wet-Season Data Sheets
Attachment C. Representative Photographs

1.0 OBJECTIVE

The purpose of this report is to summarize the results of protocol surveys for listed large vernal pool branchiopods conducted by Madrone Ecological Consulting (Madrone) within the 700 Crocker Drive Study Area during the 2017-2018 dry-season and wet-season. Target species included the federally endangered conservancy fairy shrimp (*Branchinecta conservatio*) and vernal pool tadpole shrimp (*Lepidurus packardi*), as well as the federally threatened vernal pool fairy shrimp (*Branchinecta lynchi*). Dry-season and wet-season surveys were conducted under the authority of U.S. Fish and Wildlife Service (USFWS) Recovery Permits No. TE-012973 and TE-89991B-0, respectively, of Section 10(a)(1)(A) of the ESA, 16 U.S. Code 1531 et seq. and in accordance with the 13 November 2017 *Survey Guidelines for the Listed Large Branchiopods* (Guidelines) (USFWS 2017). Authorization to conduct dry-season and wet-season surveys was issued by the USFWS in an e-mail to Sarah VonderOhe on 19 December 2017 (USFWS reference number 2018-TA-0713).

2.0 LOCATION

The approximately 129-acre Study Area is located at 700 Crocker Drive, City of Vacaville, Solano County, California. The Study Area falls within the Rancho Los Putos Civil Land Grant, Township 7 North, Range 1 West (MDB&M) of the "Allendale, California" 7.5-Minute Series USGS Topographic Quadrangle (USGS 2013) (**Figure 1**).

3.0 METHODS AND MATERIALS

3.1 Dry-Season Survey

All potential large vernal pool branchiopod habitat was sampled within the Study Area. Potential habitat for federally listed large branchiopods is defined as any seasonally inundated depression that, on average, ponds water at a sufficient depth and duration for a listed large branchiopod to complete its lifecycle. Habitats that swiftly flow water (e.g., creeks, streams, and ephemeral drainages) or habitats that area semi-to-permanently inundated and support perennial populations of predators (e.g., bullfrogs, fish, and crayfish) generally do not provide suitable habitat for listed large branchiopods (USFWS 2017). **Figure 2** is an exhibit of potential Waters of the U.S. and non-Waters potential federally-listed large branchiopod habitat within the Study Area (NAIP 2016).

Dry soil/substrate was collected from the top 1 to 3 centimeters with a hand spade from the lowest topographic areas within each sampled feature. Wherever possible, substrate samples were collected in chunks to avoid damaging branchiopod eggs. The number and volume of soil/substrate samples collected was proportionate to the size of the sampled feature pursuant with the requirements summarized in Table 1 of the Guidelines (USFWS 2017). Soil/substrate samples were transferred to liter-sized plastic bags and marked with the project name, aquatic feature number, and collection date for transport to Madrone's laboratory. Madrone senior biologists Daria Snider and Dustin Brown collected soil samples on 21 December 2017 within all previously mapped seasonal wetlands. During the following wet season five

additional topographic depressions appeared to pond water long enough to potentially support federally-listed large vernal pool branchiopods. These five additional features were sampled on 15 June 2018. Dry-season samples were collected in accordance with the Guidelines (USFWS 2017) and the special terms and conditions of Ms. Snider's Take Permit (TE89994B-0) dated 5 January 2017.

A brine solution was prepared in the lab by stirring non-iodized salt with lukewarm tap water in a large container. Soils/substrate samples collected from each aquatic feature were individually placed into the brine solution, and manually worked by hand to reduce soil structure. Floating organic material was decanted into either a 710-micron-diameter pore-size sieve stacked atop a 150- micron-diameter pore-size sieve. The soil material was processed through the top sieve by flushing it with lukewarm tap water while gently rubbing it with a soft-bristle brush. The organic material retained from the 150-micron-diameter pore-size sieve was then removed and thinly spread into plastic petri dishes.

All sieved fractions were microscopically inspected for the presence of large branchiopod eggs by Madrone senior biologist Dustin Brown under the supervision of permitted dry-season biologist, Sarah VonderOhe. Soil samples were prepared and inspected pursuant to the Guidelines (USFWS 2017) and the special terms and conditions of Ms. VonderOhe's Take Permit (TE89991B-0) dated 5 January 2017.

If present, total egg abundance information for each sampled feature was reported in terms of: low abundance (estimate of 1-10 eggs/sampled feature); medium abundance (estimate of 11-50 eggs/sampled feature); and high abundance (estimate of more than 50 eggs/sampled feature).

Scanning electron micrographs of eggs (Gilchrist 1978, Hill and Shepard 1998, Mura 1991) are used to identify and compare any branchiopod eggs observed within the soil samples. Evidence of other aquatic invertebrates encountered was also noted on the lab data sheet. **Attachment A** contains the Dry-Season Lab Data Sheet, which lists sampled aquatic features.

3.2 Wet-Season Survey

Field surveys were conducted by Mr. Hirkala approximately every 14 days between 17 January 2018, and 25 April 2018, in accordance with the Guidelines (USFWS 2017) and the special terms and conditions of Mr. Hirkala's Take Permit dated 29 March 2013, and renewed on 19 March 2018. All features representing appropriate federally-listed large branchiopod habitat were dry by the final sampling date of 25 April 2017, with the exception of three seasonal wetlands that are labeled as SW-14, SW-15, and SW-16 on **Figure 2** (NAIP 2016). On 2 May 2018, senior Madrone biologists Mr. Brown and Ms. Snider performed a site visit and noted that SW-14 and SW-16 were completely dry; SW-15 supported very limited ponding and was expected to dry within a couple of days.

All potential large vernal pool branchiopod habitat was sampled with a 5-foot long dip net equipped with a 12-inch D-ring and 650 micron mesh. Sampling involved making a series of pulls by extending the net out and pulling it back in a sweeping motion. The net was examined for the presence of large vernal pool

branchiopods and then cleaned of debris between pulls. The number of pulls made in each feature was commensurate to feature size and ponding depth. In addition, all potential habitats were visually inspected for the presence of large vernal pool branchiopods throughout the sampling sessions. Air temperature, water temperature, and approximate maximum depth of ponding was measured and recorded during the sampling sessions. **Attachment B** contains the wet-season data sheets with the above described field data.

4.0 GENERAL SITE CONDITIONS AND HABITATS

The Study Area is located south of Midway Road and west of Crocker Drive, and accessible in the southeast corner from 700 Crocker Drive, or from Midway Road along the north. I-505 is located east of the Study Area and Eubanks Drive is located west. The southern portion of the 700 Crocker site is an inactive grocery distribution center, and is mostly developed, including large warehouses, paved parking lots, and associated infrastructure. The remainder of the site has ruderal grassland and is disked for vegetation control annually, and this area comprised the bulk of the Study Area.

The Study Area is relatively flat with elevations ranging from approximately 110-120 feet above mean sea level. Surrounding properties including industrial to the south, vacant land to the west, rural residential and low density business to the north. The I-505 freeway is located east of the Study Area, and beyond that is agricultural and open space with a riparian corridor and adjacent wetlands.

The Study Area, which is mostly covered with upland vegetation, is disked annual. Upland vegetation within the Study Area is comprised primarily of non-native annual grassland and ruderal vegetation adapted to the frequent vegetation control practices, including Oats (*Avena sp*.), annual ryegrass (*Festuca perennis*), turkey mullein (*Croton setiger*), yellow star thistle (*Centaurea solstitialis*), and soft chess brome (*Bromus hordeaceus*).

A previous fill area/dump site is located within the western portion of the Study Area. Piles of gravel and earthen fill are interspersed with coyote bush (*Baccharis pilularis*), white mulberry (*Morus alba*), and Gooding's black willow (*Salix gooddingii*). A number of small seasonal wetlands are also scattered within this vegetation community.

Gibson Canyon Creek is dominated by herbaceous annual and biannuals including spiny cocklebur (*Xanthium spinosum*), annual ryegrass, yellow star thistle, and curly dock (*Rumex crispus*) with scattered trees and shrubs including bluegum eucalyptus (*Eucalyptus globulus*), walnut (*Juglans* sp.), wild plumb (*Prunus* sp.), and Chinese pistache (*Pistacia chinensis*). West and east of the Study Area, this corridor includes a mature eucalyptus windrow. Several fish were observed within Gibson Canyon Creek, which was not categorized as large vernal pool branchiopod habitat.

4.1 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2018), five mapping units occur within the Study Area (**Figure 3**). None of these soils consist of hydric components, or are known to contain hydric inclusions (NRCS 2018). Soils within the Study Area fall within the hydrological soil groups C and D, which generally have a slow infiltration rate when thoroughly wet, a slow to very slow rate of water transmission, and typically a higher runoff potential. Soils found within the Study Area are summarized in **Table 1**.

Table 1. Hydric Rating of Soils within the Study Area

Soil Unit Name	Map Unit Symbol	Hydric Rating
Capay silty clay loam	Ca	No
Corning gravelly loam, 2 to 15 percent slopes, eroded	CvD2	No
Corning gravelly loam, 0 to 2 percent slopes, MLRA 17	CvD2	No
San Ysidro sandy loam, 0 to 2 percent slopes	SeA	No
San Ysidro sandy loam, thick surface , 0 to 2 percent slopes	SfA	No

5.0 SURVEYED POTENTIAL LARGE VERNAL POOL BRANCHIOPOD HABITAT

The Study Area contains several aquatic resources including the following:

- Sixteen seasonal wetlands;
- One drainage ditch;
- Gibson Canyon Creek (an intermittent drainage); and
- Two reaches of a canal (Kilkenny Canal 3).

Gibson Canyon Creek and the two reached of the Kilkenny Canal 3 supported fish and do not represent appropriate habitat for large listed vernal pool branchiopods. The drainage ditch minimally ponded or supported flows too high in its lower reaches after storm events to represent suitable habitat.

The seasonal wetlands comprise the majority of habitat for large listed branchiopods within the Study Area, though several of these did not pond throughout the course of wet-season sampling. Features that did not pond included SW-2 through SW-8 and SW-10 through SW-13. All of the remaining seasonal wetland displayed some degree of ponding.

SW-1 is located just south of Midway Road and drains through a culvert to a drainage ditch. The remainder of the seasonal wetlands are isolated depressions. Five seasonal wetlands (SW-3, SW-4, SW-5, SW-6, SW-7, SW-8 and SW-9) are depressions within a previous fill site that are interspersed with piles of dirt, rock, and plant debris. The remaining seasonal wetlands (SW-2, SW-10, SW-11, SW-12, SW-13, SW-14, SW-15, and SW-16) are located in ruderal fields that are disked annually, including in the spring of 2017 prior to

branchiopod surveys. Seasonal wetlands support curly dock (FAC), turkey mullein during the dry-season, creeping spikerush (OBL), annual ryegrass (FAC), and hyssop loosestrife (*Lythrum hyssopifolia*)(OBL).

Also sampled were five ponding topographic depressions, which are labeled as PT-1 through PT-5 on **Figure 2**. Most of these appear to be tire ruts or slight depressions resulting from routine disking, which is performed annually for weed and fire control.

6.0 FINDINGS

No listed or non-listed large branchiopod eggs (cysts) were observed in any sample collected during the 2017 dry-season. No listed or non-listed large branchiopods were observed within the Study Area during the 2017-18 wet-season protocol surveys.

7.0 REFERENCES

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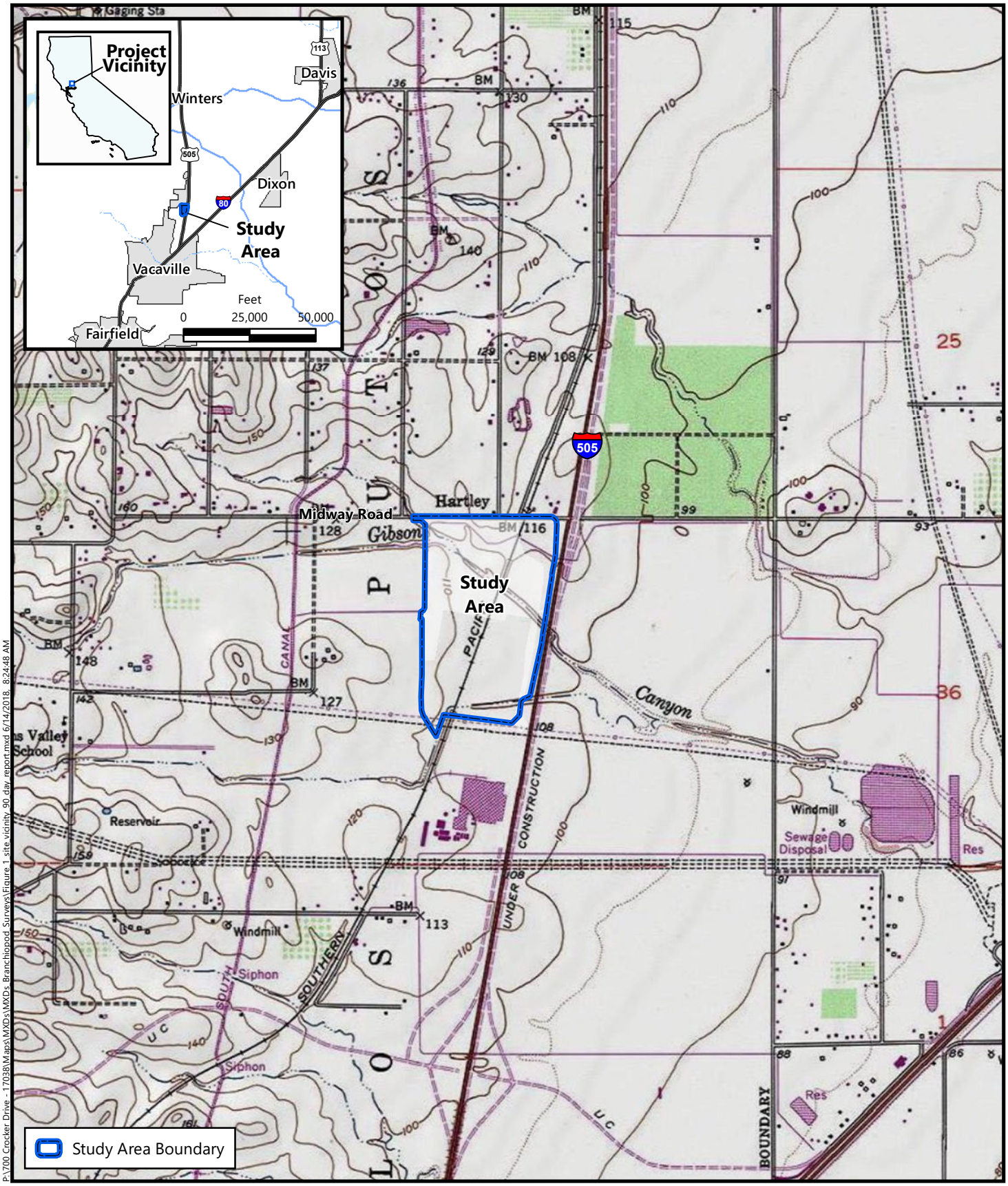
Figures

Figure 1. Site and Vicinity

Figure 2. Natural Resources Conservation Service Soils

Figure 3. Aquatic Resources



P:\700 Crocker Drive - 17038\Maps\MXDs\MXDs_Branchiopod_Surveys\Figure 1 site vicinity 90 day report.mxd 6/14/2018, 8:24:48 AM

N

Feet
0 1,000 2,000

Source: United States Geologic Survey, 2013.
Rancho Los Putos Civil Land Grant
Township 7 North, Range 1 West, MDB&M
"Allendale, California" 7.5-Minute Topographic Quadrangle
Longitude -121.949111, Latitude 38.41455

Figure 1
Site and Vicinity

700 Crocker Drive
City of Vacaville, Solano County, California

MADRONE ECOLOGICAL CONSULTING

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N

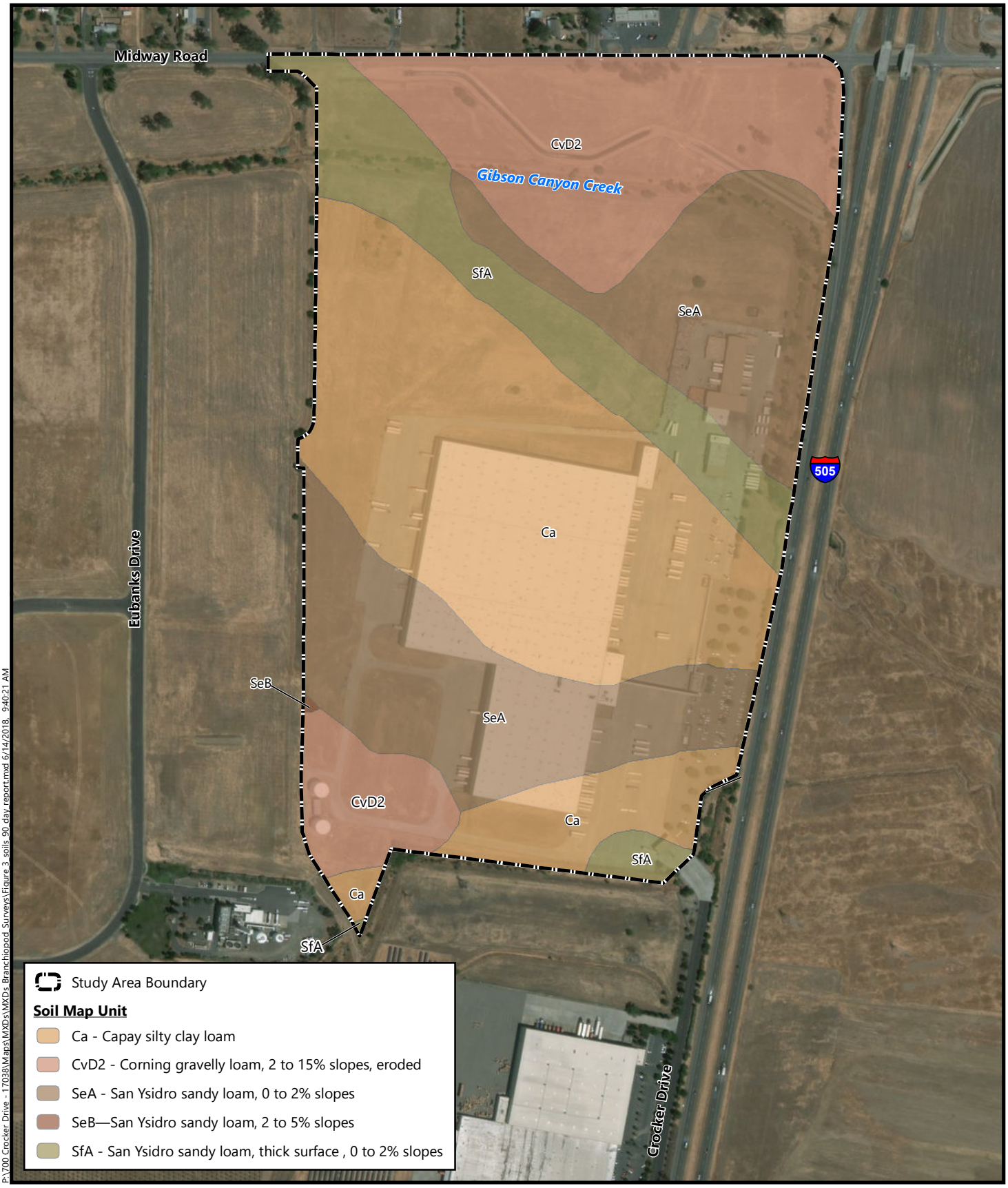
Feet
0 225 450

Figure 2
Sampling Locations

Aerial Source: *USDA, National Agriculture Imagery Program,* 8 July 2016.

700 Crocker Drive
City of Vacaville, Solano County, California

MADRONE ECOLOGICAL CONSULTING



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N

Feet
0 225 450

Soil Survey Source: *USDA, Soil Conservation Service.*
Soil Survey Geographic (SSURGO) database for Solano County, California
Aerial Source: *USDA, National Agriculture Imagery Program,* 8 July 2016.

Figure 3
Natural Resources Conservation Service Soils

700 Crocker Drive
City of Vacaville, Solano County, California

MADRONE ECOLOGICAL CONSULTING

Attachments

Attachment A. Dry-Season Lab Data Sheet

Attachment B. Wet-Season Data Sheets

Attachment C. Representative Photographs

Attachment A

Dry-Season Lab Data Sheet

Dry Season Lab Data Sheet

Project Information		Biologist Information	
Project Name: 700 Crocker	Quad: Allendale, CA	Name of Person(s) Who Conducted the Following Tasks and Permit Number(s):	
USFWS Project Number: #2018-TA-0713	Township: 7 North	Soil Collection: D. Snider (TE-89994B-0) and D. Brown	
County: Solano, CA	Range: 1 West	Soil Processing: D. Brown	
Lat: 38.414512	Section: 35	Soil Analysis/Cysts ID: D. Brown and S. VonderOhe (TE-089991B-0)	
Long: -121.949276		Soil Collection Date: 12/21/2017 and 6/15/2018	Soil Processing Date: 2/22/2018, 2/28/2018, and 6/15/2018

Feature Number	Invertbrates Present (X)														Comments
	Insect Exo-Skeletons	Micro- Turbellaria Cysts	*Cladocera ephippia*	Ostracods Live/Cysts/ Carapaces	Copepods Live/Cysts	Number of Large Branchiopod Eggs					Hydracarina Live	Nematoda	Collembola	Other Species	
						Branchinecta sp.	*Lepidurus packardi*	*Linderiella occidentalis*	*Lynceus brachyurus*	*Cyzicus californicus*					
SW-16	X	X	X	X									X	Rotifers	2 plates
SW-9	X										X		X		3 plates
SW-1	X										X		X		5 plates
SW-17	X										X				3 plates, microbeads
SW-13	X		X								X				5 plates
SW-3	X										X		X	Rotifers	5 plates
SW-2	X										X				8 plates
SW-14	X		X								X		X	Rotifers	4 plates
SW-15	X	X	X	X									X		20 plates
SW-12	X										X		X		10 plates
SW-10	X	X	X	X									X		9 plates
SW-7	X										X		X	Rotifers	6 plates
SW-11	X		X								X		X		10 plates, microbeads
SW-5	X												X	Pseudoscorpion	5 plates, trash, microbeads
SW-6	X												X		12 plates
SW-8	X										X		X	Rotifers	9 plates
SW-4	X										X		X		8 plates
PT-3	X	X											X		3 plates
PT-4	X										X		X		2 plates
PT-5	X	X									X		X		4 plates
PT-1	X												X		2 plates
PT-2	X	X											X		3 plates

Attachment B

Wet-Season Data Sheets

2017-18 WET-SEASON LISTED BRANCHIOPOD SURVEY
700 Crocker Drive
Solano County

TE-795935-5
Allendale, CA 7.5 Min. Topo. Quad.
Rancho Los Putos Civil Land Grant; MDBM

Water Feature Number	Sampling Date	Weather Conditions	Air Temp. (C)	Water Temp. (C)	Current Depth (Inches)	Surface Area (percent of est. max.)	Est. Max Surface Area (sq. ft.)	Observed Branchiopods	*Other Organisms Observed/Notes	Habitat Condition	Surveyor	Longitude degrees (NAD83)	Latitude degrees (NAD83)
PT-1	1/17/18	Foggy	15	14	10	90%	109			Fallow	M. Hirkala	-121.94716354300	38.41631727440
PT-2	1/17/18	Foggy	14	13	12	100%	192	`	DYT/PLA/CLA/NOT	Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-3	1/17/18	Foggy	14	13	9	100%	658		PLA/NOT	Fallow	M. Hirkala	-121.95078599000	38.41344672810
PT-4	1/17/18	Foggy	14	13	6	100%	296		PLA/NOT	Fallow	M. Hirkala	-121.95092391500	38.41339651210
PT-5	1/17/18	Foggy	10	10	6	100%	1,183			Fallow	M. Hirkala	-121.95136740600	38.40854390230
SW-1	1/17/18	Foggy	10	N/A	0	0%	656			Fallow	M. Hirkala	-121.95121776300	38.41696535550
SW-2	1/17/18	Foggy	10	N/A	0	0%	202			Fallow	M. Hirkala	-121.94715006300	38.41658450760
SW-3	1/17/18	Foggy	10	N/A	0	0%	198			Fallow	M. Hirkala	-121.95138035900	38.41546398730
SW-4	1/17/18	Foggy	10	N/A	0	0%	69			Fallow	M. Hirkala	-121.95140777000	38.41540658220
SW-5	1/17/18	Foggy	10	N/A	0	0%	20			Fallow	M. Hirkala	-121.95131114100	38.41545811450
SW-6	1/17/18	Foggy	10	N/A	0	0%	368			Fallow	M. Hirkala	-121.95138135700	38.41519657670
SW-7	1/17/18	Foggy	10	N/A	0	0%	585			Fallow	M. Hirkala	-121.95128230200	38.41519759460
SW-8	1/17/18	Foggy	10	N/A	0	0%	79			Fallow	M. Hirkala	-121.95139801100	38.41504020370
SW-9	1/17/18	Foggy	10	N/A	0	0%	780			Fallow	M. Hirkala	-121.95133461400	38.41491232780
SW-10	1/17/18	Foggy	10	N/A	0	0%	2,946			Fallow	M. Hirkala	-121.94955543600	38.41557923460
SW-11	1/17/18	Foggy	10	N/A	0	0%	413			Fallow	M. Hirkala	-121.94913628700	38.41545044190
SW-12	1/17/18	Foggy	10	N/A	0	0%	80			Fallow	M. Hirkala	-121.94897621100	38.41541616660
SW-13	1/17/18	Foggy	10	N/A	0	0%	302			Fallow	M. Hirkala	-121.94894242100	38.41529940730
SW-14	1/17/18	Foggy	11	10	12	100%	2,495	`	DYT/PLA/CLA/NOT/PTF - eggs	Fallow	M. Hirkala	-121.95164754700	38.41114839760
SW-15	1/17/18	Foggy	10	N/A	0	0%	19,376			Fallow	M. Hirkala	-121.94605627100	38.41596548310
SW-16	1/17/18	Foggy	10	10	8	100%	4,238		DYT/PLA/LYM/NOT	Fallow	M. Hirkala	-121.95062827700	38.41060147950
SW-17	1/17/18	Foggy	10	10	5	5%	1,334		DYT/PLA/CLA/NOT	Fallow	M. Hirkala	-121.95117485300	38.40893156810
PT-1	1/31/18	Clear	0	8	6	95%	109			Fallow	M. Hirkala	-121.94716354300	38.41631727440
PT-2	1/31/18	Clear	7	6	9	90%	192		DYT/PLA/CLA/NOT	Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-3	1/31/18	Clear	9	7	6	70%	658		NOT/PLA	Fallow	M. Hirkala	-121.95078599000	38.41344672810
PT-4	1/31/18	Clear	9	8	5	70%	296		PLA	Fallow	M. Hirkala	-121.95092391500	38.41339651210
PT-5	1/31/18	Clear	5	5	5	45%	1,183		NOT/PLA/CLA/PTF - tadpoles	Fallow	M. Hirkala	-121.95136740600	38.40854390230
SW-1	1/31/18	Clear	5	N/A	0	0%	656			Fallow	M. Hirkala	-121.95121776300	38.41696535550
SW-2	1/31/18	Clear	5	N/A	0	0%	202			Fallow	M. Hirkala	-121.94715006300	38.41658450760
SW-3	1/31/18	Clear	5	N/A	0	0%	198			Fallow	M. Hirkala	-121.95138035900	38.41546398730

Note: Branchinecta lynchi = BRLY; Branchinecta conservatio = BRCO; Branchinecta mesovallensis = BRME; and Linderiella occidentalis = LIOC.

2017-18 WET-SEASON LISTED BRANCHIOPOD SURVEY
700 Crocker Drive
Solano County

TE-795935-5
Allendale, CA 7.5 Min. Topo. Quad.
Rancho Los Putos Civil Land Grant; MDBM

Water Feature Number	Sampling Date	Weather Conditions	Air Temp. (C)	Water Temp. (C)	Current Depth (Inches)	Surface Area (percent of est. max.)	Est. Max Surface Area (sq. ft.)	Observed Branchiopods	*Other Organisms Observed/Notes	Habitat Condition	Surveyor	Longitude degrees (NAD83)	Latitude degrees (NAD83)
SW-4	1/31/18	Clear	5	N/A	0	0%	69			Fallow	M. Hirkala	-121.95140777000	38.41540658220
SW-5	1/31/18	Clear	5	N/A	0	0%	20			Fallow	M. Hirkala	-121.95131114100	38.41545811450
SW-6	1/31/18	Clear	5	N/A	0	0%	368			Fallow	M. Hirkala	-121.95138135700	38.41519657670
SW-7	1/31/18	Clear	5	N/A	0	0%	585			Fallow	M. Hirkala	-121.95128230200	38.41519759460
SW-8	1/31/18	Clear	5	N/A	0	0%	79			Fallow	M. Hirkala	-121.95139801100	38.41504020370
SW-9	1/31/18	Clear	5	N/A	0	0%	780			Fallow	M. Hirkala	-121.95133461400	38.41491232780
SW-10	1/31/18	Clear	5	N/A	0	0%	2,946			Fallow	M. Hirkala	-121.94955543600	38.41557923460
SW-11	1/31/18	Clear	5	N/A	0	0%	413			Fallow	M. Hirkala	-121.94913628700	38.41545044190
SW-12	1/31/18	Clear	5	N/A	0	0%	80			Fallow	M. Hirkala	-121.94897621100	38.41541616660
SW-13	1/31/18	Clear	5	N/A	0	0%	302			Fallow	M. Hirkala	-121.94894242100	38.41529940730
SW-14	1/31/18	Clear	7	6	9	90%	2,495	`	DYT/PLA/CLA/NOT/PTF - eggs	Fallow	M. Hirkala	-121.95164754700	38.41114839760
SW-15	1/31/18	Clear	5	N/A	0	0%	19,376			Fallow	M. Hirkala	-121.94605627100	38.41596548310
SW-16	1/31/18	Clear	6	5	8	85%	4,238		DYT/PLA/NOT/PTF - eggs	Fallow	M. Hirkala	-121.95062827700	38.41060147950
SW-17	1/31/18	Clear	5	N/A	0	0%	1,334			Fallow	M. Hirkala	-121.95117485300	38.40893156810
PT-1	2/14/18	Clear	5	N/A	0	0%	109			Fallow	M. Hirkala	-121.94716354300	38.41631727440
PT-2	2/14/18	Clear	5	N/A	0	0%	192			Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-3	2/14/18	Clear	5	N/A	0	0%	658			Fallow	M. Hirkala	-121.95078599000	38.41344672810
PT-4	2/14/18	Clear	5	N/A	0	0%	296			Fallow	M. Hirkala	-121.95092391500	38.41339651210
PT-5	2/14/18	Clear	5	N/A	0	0%	1,183			Fallow	M. Hirkala	-121.95136740600	38.40854390230
SW-1	2/14/18	Clear	5	N/A	0	0%	656			Fallow	M. Hirkala	-121.95121776300	38.41696535550
SW-2	2/14/18	Clear	5	N/A	0	0%	202			Fallow	M. Hirkala	-121.94715006300	38.41658450760
SW-3	2/14/18	Clear	5	N/A	0	0%	198			Fallow	M. Hirkala	-121.95138035900	38.41546398730
SW-4	2/14/18	Clear	5	N/A	0	0%	69			Fallow	M. Hirkala	-121.95140777000	38.41540658220
SW-5	2/14/18	Clear	5	N/A	0	0%	20			Fallow	M. Hirkala	-121.95131114100	38.41545811450
SW-6	2/14/18	Clear	5	N/A	0	0%	368			Fallow	M. Hirkala	-121.95138135700	38.41519657670
SW-7	2/14/18	Clear	5	N/A	0	0%	585			Fallow	M. Hirkala	-121.95128230200	38.41519759460
SW-8	2/14/18	Clear	5	N/A	0	0%	79			Fallow	M. Hirkala	-121.95139801100	38.41504020370
SW-9	2/14/18	Clear	5	N/A	0	0%	780			Fallow	M. Hirkala	-121.95133461400	38.41491232780
SW-10	2/14/18	Clear	5	N/A	0	0%	2,946			Fallow	M. Hirkala	-121.94955543600	38.41557923460
SW-11	2/14/18	Clear	5	N/A	0	0%	413			Fallow	M. Hirkala	-121.94913628700	38.41545044190

Note: Branchinecta lynchi = BRLY; Branchinecta conservatio = BRCO; Branchinecta mesovallensis = BRME; and Linderiella occidentalis = LIOC.

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700 Crocker Drive
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TE-795935-5
Allendale, CA 7.5 Min. Topo. Quad.
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Water Feature Number	Sampling Date	Weather Conditions	Air Temp. (C)	Water Temp. (C)	Current Depth (Inches)	Surface Area (percent of est. max.)	Est. Max Surface Area (sq. ft.)	Observed Branchiopods	*Other Organisms Observed/Notes	Habitat Condition	Surveyor	Longitude degrees (NAD83)	Latitude degrees (NAD83)
SW-12	2/14/18	Clear	5	N/A	0	0%	80			Fallow	M. Hirkala	-121.94897621100	38.41541616660
SW-13	2/14/18	Clear	5	N/A	0	0%	302			Fallow	M. Hirkala	-121.94894242100	38.41529940730
SW-14	2/14/18	Clear	5	N/A	0	0%	2,495			Fallow	M. Hirkala	-121.95164754700	38.41114839760
SW-15	2/14/18	Clear	5	N/A	0	0%	19,376			Fallow	M. Hirkala	-121.94605627100	38.41596548310
SW-16	2/14/18	Clear	5	N/A	0	0%	4,238			Fallow	M. Hirkala	-121.95062827700	38.41060147950
SW-17	2/14/18	Clear	5	N/A	0	0%	1,334			Fallow	M. Hirkala	-121.95117485300	38.40893156810
PT-1	3/14/18	Rain	10	9	12	100%	109		PTF - eggs	Fallow	M. Hirkala	-121.94716354300	38.41631727440
PT-2	3/14/18	Rain	8	N/A	0	0%	192			Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-3	3/14/18	Rain	9	8	9	100%	658		PLA	Fallow	M. Hirkala	-121.95078599000	38.41344672810
PT-4	3/14/18	Rain	9	8	9	100%	296		PLA	Fallow	M. Hirkala	-121.95092391500	38.41339651210
PT-5	3/14/18	Rain	8	8	9	100%	1,183		PLA	Fallow	M. Hirkala	-121.95136740600	38.40854390230
SW-1	3/14/18	Rain	10	9	8	100%	656			Fallow	M. Hirkala	-121.95121776300	38.41696535550
SW-2	3/14/18	Rain	8	N/A	0	0%	202			Fallow	M. Hirkala	-121.94715006300	38.41658450760
SW-3	3/14/18	Rain	8	N/A	0	0%	198			Fallow	M. Hirkala	-121.95138035900	38.41546398730
SW-4	3/14/18	Rain	8	N/A	0	0%	69			Fallow	M. Hirkala	-121.95140777000	38.41540658220
SW-5	3/14/18	Rain	8	N/A	0	0%	20			Fallow	M. Hirkala	-121.95131114100	38.41545811450
SW-6	3/14/18	Rain	8	N/A	0	0%	368			Fallow	M. Hirkala	-121.95138135700	38.41519657670
SW-7	3/14/18	Rain	8	N/A	0	0%	585			Fallow	M. Hirkala	-121.95128230200	38.41519759460
SW-8	3/14/18	Rain	8	N/A	0	0%	79			Fallow	M. Hirkala	-121.95139801100	38.41504020370
SW-9	3/14/18	Rain	8	N/A	0	0%	780			Fallow	M. Hirkala	-121.95133461400	38.41491232780
SW-10	3/14/18	Rain	8	N/A	0	0%	2,946			Fallow	M. Hirkala	-121.94955543600	38.41557923460
SW-11	3/14/18	Rain	8	N/A	0	0%	413			Fallow	M. Hirkala	-121.94913628700	38.41545044190
SW-12	3/14/18	Rain	8	N/A	0	0%	80			Fallow	M. Hirkala	-121.94897621100	38.41541616660
SW-13	3/14/18	Rain	8	N/A	0	0%	302			Fallow	M. Hirkala	-121.94894242100	38.41529940730
SW-14	3/14/18	Rain	9	8	9	100%	2,495		PLA/PTF - eggs and tadpoles	Fallow	M. Hirkala	-121.95164754700	38.41114839760
SW-15	3/14/18	Rain	8	N/A	0	0%	19,376			Fallow	M. Hirkala	-121.94605627100	38.41596548310
SW-16	3/14/18	Rain	8	8	10	100%	4,238		PLA/PTF - eggs and tadpoles	Fallow	M. Hirkala	-121.95062827700	38.41060147950
SW-17	3/14/18	Rain	8	8	6	60%	1,334		PLA	Fallow	M. Hirkala	-121.95117485300	38.40893156810
PT-1	3/28/18	Partly cloudy	12	11	12	100%	109		PTF - eggs	Fallow	M. Hirkala	-121.94716354300	38.41631727440

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Allendale, CA 7.5 Min. Topo. Quad.
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Water Feature Number	Sampling Date	Weather Conditions	Air Temp. (C)	Water Temp. (C)	Current Depth (Inches)	Surface Area (percent of est. max.)	Est. Max Surface Area (sq. ft.)	Observed Branchiopods	*Other Organisms Observed/Notes	Habitat Condition	Surveyor	Longitude degrees (NAD83)	Latitude degrees (NAD83)
PT-2	3/28/18	Partly cloudy	11	10	7	100%	192			Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-3	3/29/18	Partly cloudy	11	10	7	100%	658			Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-4	3/30/18	Partly cloudy	11	10	7	100%	296			Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-5	3/28/18	Partly cloudy	10	10	8	100%	1,183		CLA/CUL/DYT/CLA	Fallow	M. Hirkala	-121.95136740600	38.40854390230
SW-1	3/28/18	Partly cloudy	10	N/A	0	0%	656			Fallow	M. Hirkala	-121.95121776300	38.41696535550
SW-2	3/28/18	Partly cloudy	10	N/A	0	0%	202			Fallow	M. Hirkala	-121.94715006300	38.41658450760
SW-3	3/28/18	Partly cloudy	10	N/A	0	0%	198			Fallow	M. Hirkala	-121.95138035900	38.41546398730
SW-4	3/28/18	Partly cloudy	10	N/A	0	0%	69			Fallow	M. Hirkala	-121.95140777000	38.41540658220
SW-5	3/28/18	Partly cloudy	10	N/A	0	0%	20			Fallow	M. Hirkala	-121.95131114100	38.41545811450
SW-6	3/28/18	Partly cloudy	10	N/A	0	0%	368		DYT/PTF - eggs	Fallow	M. Hirkala	-121.95138135700	38.41519657670
SW-7	3/28/18	Partly cloudy	10	N/A	0	0%	585			Fallow	M. Hirkala	-121.95128230200	38.41519759460
SW-8	3/28/18	Partly cloudy	10	N/A	0	0%	79			Fallow	M. Hirkala	-121.95139801100	38.41504020370
SW-9	3/28/18	Partly cloudy	12	12	4	40%	780			Fallow	M. Hirkala	-121.95133461400	38.41491232780
SW-10	3/28/18	Partly cloudy	10	N/A	0	0%	2,946			Fallow	M. Hirkala	-121.94955543600	38.41557923460
SW-11	3/28/18	Partly cloudy	10	N/A	0	0%	413			Fallow	M. Hirkala	-121.94913628700	38.41545044190
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SW-14	3/28/18	Partly cloudy	10	10	10	100%	2,495		CUL/DYT/NOT/PLA/CLA/PTF - tadpoles	Fallow	M. Hirkala	-121.95164754700	38.41114839760
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SW-17	3/28/18	Partly cloudy	10	10	8	15%	1,334		CLA/CUL/DYT/CLA	Fallow	M. Hirkala	-121.95117485300	38.40893156810
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PT-2	4/11/18	Cloudy	13	13	12	100%	192			Fallow	M. Hirkala	-121.94683235500	38.41544045100
PT-3	4/11/18	Cloudy	12	11	6	100%	658		PLA	Fallow	M. Hirkala	-121.95078599000	38.41344672810
PT-4	4/11/18	Cloudy	12	11	6	100%	296		PLA	Fallow	M. Hirkala	-121.95092391500	38.41339651210
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SW-7	4/11/18	Cloudy	8	N/A	0	0%	585			Fallow	M. Hirkala	-121.95128230200	38.41519759460
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SW-16	4/11/18	Cloudy	11	10	9	100%	4,238		CUL/DYT/NOT/PLA/CLA/PTF - tadpoles	Fallow	M. Hirkala	-121.95062827700	38.41060147950
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SW-16	4/25/18	Clear	15	14	5	10%	4,238		PLA/NOT/DYT/CUL/PTF - tadpoles	Fallow	M. Hirkala	-121.95062827700	38.41060147950
SW-17	4/25/18	Clear	15	N/A	0	0%	1,334			Fallow	M. Hirkala	-121.95117485300	38.40893156810

*Abbreviations for Other Organisms Observed:

BAE - Baetid	CUL - Culicid	HYD - Hydrophilid	PTF- Pacific tree frog
CLA - Cladosera	COP - Copepoda	LYM - Lymnaeid	
COR - Corixid (water boa	DYT - Dytiscid	ODO - Odonata	

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Attachment C

Representative Photos

SW-7 Facing South from North Edge of Feature (17 January 2018)

SW-10 Facing North from South Edge of Feature (17 January 2018)

SW-11 Facing Southeast from Northeast Edge of Feature (17 January 2018)

SW-14 Facing Northeast from Southeast Edge of Feature (17 January 2018)

SW-15 Facing Southeast from Northeast Edge of Feature (17 January 2018)

SW-16 Facing West from East Edge of Feature (17 January 2018)

SW-17 Facing South from North Edge of Feature (17 January 2018)

PT-10 Facing West from East Edge of Feature (17 January 2018)

Aquatic Resources Delineation Report

700 Crocker Drive

Solano County, California
February 2018

MADRONE
ECOLOGICAL
CONSULTING

Prepared for:
LDK Ventures
3140 Peacekeeper Way
McClellan, CA 95652

Recommended Citation:
Madrone Ecological Consulting, LLC (Madrone). 2018. *Aquatic Resources Delineation Report for the 700 Crocker Drive*. Prepared for LDK Ventures. Published on 8 February 2018.

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700 Crocker Drive

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Attachments

Attachment A. Arid West Wetland Determination Data Forms
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Attachment C. Plant Species Observed within the Study Area
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Attachment E. GIS Shapefiles and the Aquatic Resources Excel Spreadsheet (on CD)
Attachment F. Access Letter

1.0 INTRODUCTION

This report presents the results of a delineation of aquatic resources within the 700 Crocker Drive Study Area (Study Area) conducted by Madrone Ecological Consulting, LLC (Madrone). The approximately 65-acre Study Area is located at 700 Crocker Drive, City of Vacaville, Solano County, California. The Study Area falls within the Rancho Los Putos Civil Land Grant, Township 7 North, Range 1 West (MDB&M) of the "Allendale, California" 7.5-Minute Series USGS Topographic Quadrangle (USGS 2013) (**Figure 1**).

1.1 Contact Information

Property Owner

Alan Hersh
LDK Ventures
3140 Peacekeeper Way
McClellan, CA 95652

Agent

Sarah VonderOhe
Madrone Ecological Consulting, LLC
8421 Auburn Blvd., Suite #248
Citrus Heights, CA 95610

2.0 METHODOLOGY

Madrone senior biologists Bonnie Peterson, Matt Hirkala, and Daria Snider conducted a delineation of aquatic resources within the Study Area on the 22nd of June, and 6th and 19th of October 2017, and the 24 of January 2018. Water features and data points were mapped in the field with a GPS unit capable of sub-meter accuracy (Trimble Geo XT and Arrow 100). Three-parameter data (vegetation, soils, and hydrology) were collected at each data point, documenting wetland/waters or upland status, as appropriate. The delineation map was prepared in accordance with the *Updated Map and Drawing Standards for the South Pacific Division Regulatory Program* (USACE 2016a). The GPS data was overlayed on an ortho-rectified aerial photograph (NAIP 2016).

The delineation was performed in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and the Sacramento District's *Minimum Standards for Acceptance of Preliminary Wetlands Delineations* (USACE 2016b). U.S. Army Corps of Engineers (USACE) regulations (33 CFR 328) were used to determine the presence of Waters of the United States other than wetlands. The most recent *National Wetland Plant List* (Lichvar et al. 2016) was used to determine the wetland indicator status of plants observed in the Study Area. The *Jepson eFlora* (Jepson Flora Project 2017) was used for plant nomenclature, except where it conflicted with the nomenclature in the *National Wetland Plant List*, which was given priority on the data sheets.

3.0 EXISTING CONDITIONS

The Study Area is located south of Midway Road and west of Crocker Drive, and accessible in the southeast corner from 700 Crocker Drive, or from Midway Road along the north. I-505 is located east of the Study Area and Eubanks Drive is located west. The southern portion of the 700 Crocker site is a inactive grocery distribution center, and is mostly developed, including large warehouses, paved parking lots, and associated infrastructure. The remainder of the site has ruderal grassland and is disked for vegetation control annually, and this area comprised the bulk of the Study Area.

Per a review of historic aerials (historicaerials.com 2018), two branches of Gibson Canyon Creek previously cut diagonally through the site and was rerouted north and south of the distribution center. The warehouse was constructed around 1968 and the reroute of Gibson Canyon Creek likely occurred at this time. Gibson Canyon Creek now bounds the Study area to the east and flows from west to east through the northern portion of the Study Area. Wetlands associated with Gibson Canyon Creek, located east of the I-505, drain to a drainage ditch that crosses under Crocker Drive and flows south west of 700 Crocker Drive. Additionally, a portion of the Solano County Irrigation District Kilkenny Canal 3 flows west to east through the northern portion of the Study Area. The water flow through the canal is delivered from the Putah South Canal and is controlled by a series of weirs and gates.

The Study Area is relatively flat with elevations ranging from approximately 110-120 feet above mean sea level. Surrounding properties including industrial to the south, vacant land to the west, rural residential and low density business to the north. The I-505 freeway is located east of the Study Area, and beyond that is agricultural and open space with a riparian corridor and adjacent wetlands.

The Study Area is disked annual and minimal upland vegetation is present. Upland vegetation within the Study Area is comprised primarily of sparse non-native annual grassland and ruderal vegetation adapted to the frequent vegetation control practices, including Oats (*Avena sp*.), annual rygrass (*Festuca perennis*), turkey mullein (*Croton setiger*), yellow star thistle (*Centaurea solstitialis*), and soft chess brome (*Bromus hordeaceus*).

A previous fill area/dump site is located within the western portion of the Study Area. Piles of gravel and earthen fill are interspersed with coyote bush (*Baccharis pilularis*), white mulberry (*Morus alba*), and Gooding's black willow (*Salix gooddingii*). A number of small seasonal wetlands are also scattered within this vegetation community.

Gibson Canyon Creek is dominated by herbaceous annual and biannuals including spiny cocklebur (*Xanthium spinosum*), annual rygrass, yellow star thistle, and curly dock (*Rumex crispus*) with scattered trees and shrubs including bluegum eucalyptus (*Eucalyptus globulus*), walnut (*Juglans* sp.), wild plumb (*Prunus* sp.), and Chinese pistache (*Pistacia chinensis*). West and east of the Study Area, this corridor includes a mature eucalyptus windrow.

3.1 Hydrology

Surface water in the Study Area is driven by rainfall and either ponds in the seasonal depressions, or flows through an existing storm drain system to Gibson Canyon Creek. Additionally, a small portion of the northern Study Area sheet flows directly to Gibson Canyon Creek. Gibson Canyon Creek is an intermittent tributary to McCune Creek, which flows to Ulatis Creek, then Cache Slough and ultimately the Sacramento River. The Study Area is located in the *Lower Sacramento River Watershed* (HUC 18020163) (USGS 1978).

3.2 Soils

According to the Natural Resources Conservation Service (NRCS) Soil Survey Database (NRCS 2018), four mapping units occur within the Study Area (**Figure 2**). None of these soils consist of hydric components, or are known to contain hydric inclusions (NRCS 2018). Soils within the Study Area fall within the hydrological soil groups C and D, which generally have a slow infiltration rate when thoroughly wet, a slow to very slow rate of water transmission, and typically a higher runoff potential. Soils found within the Study Area are summarized in Table 1.

Table 1. Hydric Rating of Soils within the Study Area

Soil Unit Name	Map Unit Symbol	Hydric Rating
Capay silty clay loam	Ca	No
Corning gravelly loam, 0 to 2 percent slopes, MLRA 17	CvD2	No
San Ysidro sandy loam, 0 to 2 percent slopes	SeA	No
San Ysidro sandy loam, thick surface , 0 to 2 percent slopes	SfA	No

3.3 Driving Directions

The Study Area is located at 700 Crocker Drive, Vacaville, California, 95688. To access the Study Area from Sacramento, drive west on I-80 to Leisure Town Rod. Take exit 57 from I-80 west. Following Vaca Valley Parkway to Right on Crocker Drive. Crocker Drive ends at the main gate to the Study Area.

4.0 RESULTS

Fourteen seasonal wetlands, one drainage ditch, four segments of Gibson Canyon Creek (an intermittent drainage), and a non-jurisdictional canal (Kilkenny Canal) were delineated within the Study Area (**Table 2**).

Table 2. Aquatic Resources Delineated within the Study Area

Resource Type	Acreage
Wetlands	
Seasonal Wetland	0.187
Other Waters	
Drainage Ditch	0.010
Intermittent Drainage (Gibson Canyon Creek)	0.940
Non-Jurisdictional Canal	
Canal (Kilkenny Canal)	0.500
Total	**1.637**

Data sheets are included in **Attachment A**. A number of suspect data points where collected in upland locations due to local site topography or areal signatures and this data is included with the data sheets as DP-11, DP-14, DP-15, DP-16, DP17 and DP-18. A map of the aquatic resources is included as **Figure 3** and **Attachment B**, and a list of the plant species observed in the Study Area with their wetland indicator status is included in **Attachment C**. Representative site photographs are included in **Attachment D.** GIS Shapefiles and the *Aquatic Resources Excel Spreadsheet* for the aquatic resources shown on **Attachment B** are included on a CD in **Attachment E.** Each of the feature types is described below.

4.1 Seasonal Wetland

Fourteen seasonal wetlands were delineated within the Study Area. SW-01 is located just south of Midway Road and drains through a culvert to drainage ditch DD-1. The remainder of the seasonal wetlands are isolated depressions. Five seasonal wetlands (SW-3, SW-4, SW-5, SW-6, SW-7, SW-8 and SW-9) are depressions within a previous fill site that are interspersed with piles of dirt, rock, and plant debris. The remaining six seasonal wetlands (SW-2, SW-10, SW-11, SW-12, SW-13 and SW-14) are located in the ruderal field that is disked annually, including in the spring of 2017 prior to the delineation site visits. Seasonal wetlands are dominated by curly dock (FAC), turkey mullien (UPL), creeping spikerush (OBL), annual rygrass (FAC), and hyssop loosestrife (*Lythrum hyssopifolia*)(OBL). Hydrology indicators include a biotic crust or oxidized rhizospheres. As shown on data sheet DP-09, some of the seasonal wetlands within the disked field where dominated by turkey mullein, an upland plant species that is often found in seasonal wetlands late in the season. However, due to the presence of hydric soils, wetland hydrology, as well as the diversity of obligate and facultative wetland plants within these features, they were mapped as wetlands. Soils within the seasonal wetlands exhibited a depleted matrix hydric soil indicator with a matrix colors of 10 YR 3/2 and 5-20% redox concentrations (10yr 6/6, 5yr 5/6, and/or 5yr 3/4) in the matrix.

4.2 Drainage Ditch

A roadside drainage ditch (DD-1) south of Midway Road flows from east to west into a culvert which discharges into ID-1. Approximately 0.010 acre of drainage ditch (DD-1) fall within the Study Area. This

ditch is mostly unvegetated. Scattered herbaceous vegetation within the ditch consists of ruderal non-native upland plant species including chicory (*Cichorium intybus*), and stinkwort (*Dittrichia graveolens*). This ditch receives flows from SW-1. Hydrology of the ditch is driven by runoff from the adjacent roadway. This drainage ditch was mapped at the Ordinary High Water Mark, which was identified based shelving, sediment sorting, and topographic breaks.

4.3 Intermittent Drainage (Gibson Canyon Creek)

Gibson Canyon Creek (ID-1, ID-2, and ID-3) flows from west to east through the Study Area. The creek is intermittent in nature, with no flows observed during the July and October site visits, and minimal flows in the northwestern most segment during the December site visit. The creek crosses in and out of the Study Area with four segments (0.940 acre) falling within the Study Area. The bed and banks of the creek are earthen and the banks are lined with herbaceous non-native grasses and forbs including tall nutsedge spiny cocklebur, annual rygrass, yellow star thistle, and curly dock with scattered trees and shrubs including bluegum eucalyptus and walnut. Data point DP-01 was collected within the creek and lacked hydrophytic vegetation or hydric soils and as such the intermittent drainage was mapped at the Ordinary High Water Mark, which was identified based on a combination of sediment sorting, water marks, wrack lines, and topographic breaks.

4.4 Canal (Kilkenny Canal 3)

An irrigation canal (Kilkenny Canal 3) flows through the northern portion of the Study Area. The canal is well maintained with compacted gravel or dirt sides and water within the canal is controlled by a series of pipes and wears. A data point was not collected within the canal due to access issues, however, the canal was devote of vegetation and does not contain hydrophytic vegetation. Kilkenny Canal is a component of the Solano Irrigation District waterworks. Flow to the canal originated from Putah Canal, however, flows are not relatively permanent, and are controlled via a series of weirs. The canal appears to have been created in uplands as an irrigation feature and does not contain wetlands or adjacent wetlands.

5.0 CONCLUSION

The applicant is requesting an Approved Jurisdictional Determination for the Aquatic Resources Delineation map included as **Attachment B**. A signed statement providing USACE staff accompanied access to the Study Area is included as **Attachment F**.

6.0 REFERENCES

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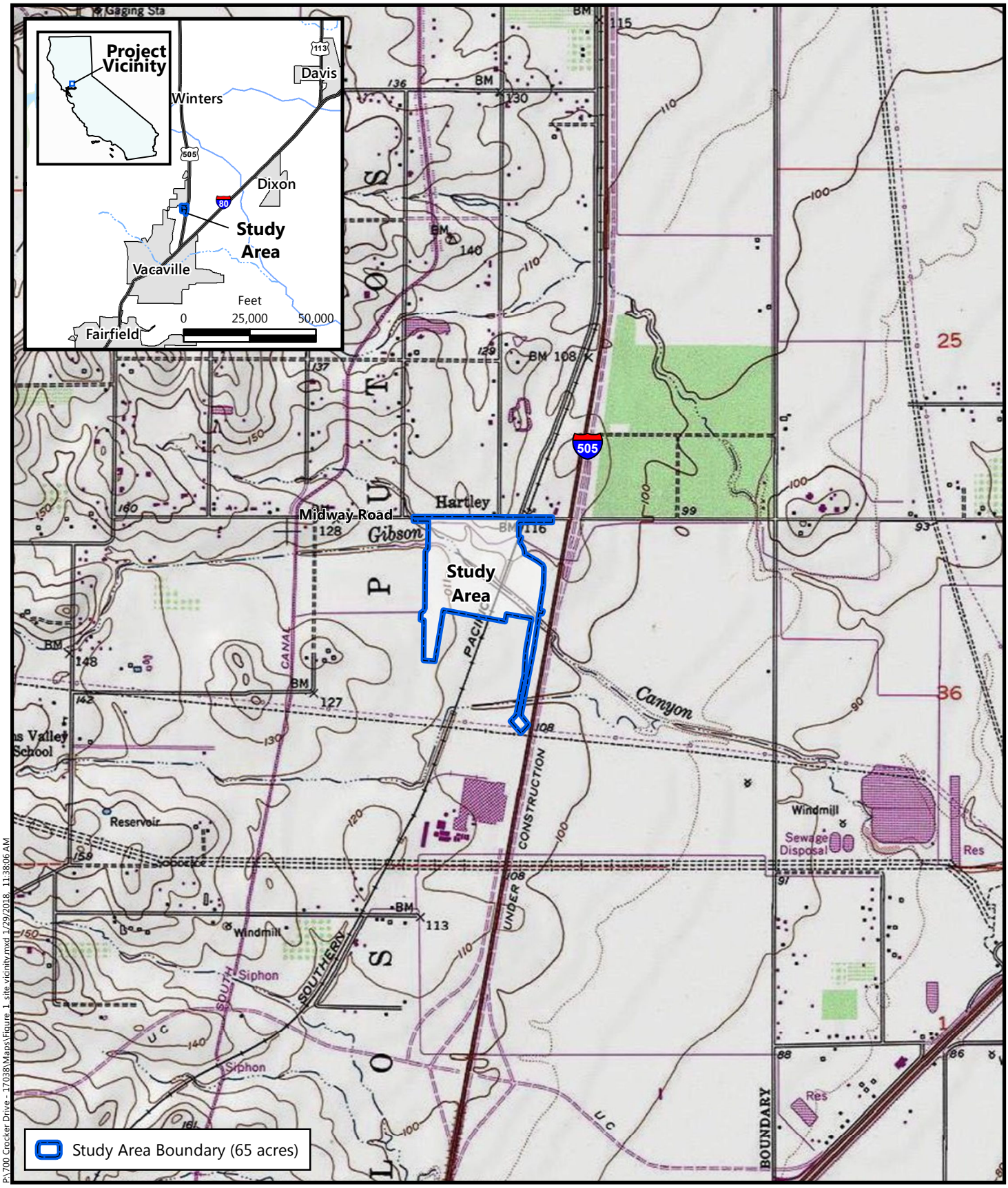
Figures

Figure 1. Vicinity Map

Figure 2. Natural Resources Conservation Service Soils

Figure 3. Aquatic Resources



N

Feet
0 1,000 2,000

Source: United States Geologic Survey, 2013.
Rancho Los Putos Civil Land Grant
Township 7 North, Range 1 West, MDB&M
"Allendale, California" 7.5-Minute Topographic Quadrangle
Longitude -121.949111, Latitude 38.41455

Figure 1
Site and Vicinity

700 Crocker Drive
City of Vacaville, Solano County, California

MADRONE ECOLOGICAL CONSULTING

P:\700 Crocker Drive - 17038\Maps\Figure 1 site vicinity.mxd 1/29/2018, 11:38:06 AM

P:\700 Crocker Drive - 17038\Maps\Figure_2_soils.mxd 1/30/2018, 4:41:37 PM

N

Feet
0 225 450

Soil Survey Source: *USDA, Soil Conservation Service.*
Soil Survey Geographic (SSURGO) database for Solano County, California
Aerial Source: *USDA, National Agriculture Imagery Program,* 8 July 2016.

Figure 2
Natural Resources Conservation Service Soils

700 Crocker Drive
City of Vacaville, Solano County, California

MADRONE ECOLOGICAL CONSULTING

P:\700 Crocker Drive - 17038\Maps\Figure 3 ARD.mxd 2/8/2018, 10:42:28 AM

N

Feet
0 225 450

Figure 3
Aquatic Resources

700 Crocker Drive
City of Vacaville, Solano County, California

Aerial Source: *USDA, National Agriculture Imagery Program,* 8 July 2016

Attachments

Attachment A. Arid West Wetland Determination Data Forms

Attachment B. Aquatic Resources Delination Map

Attachment C. Plant Species Observed within the Study Area

Attachment D. Representative Site Photographs

Attachment E. GIS Shapefiles and the Aquatic Resources Excel Spreadsheet (on CD)

Attachment F. Access Letter

Attachment A

Arid West Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 01/23/18
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-01
Investigator(s): Matt Hirkala Section, Township, Range: Rancho Los Putos Civil Land Grant
Landform (hillslope, terrace, etc.): Intermittent drainage Local relief (concave, convex, none): concave Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41696826 Long: -121.9525984 Datum: NAD 83
Soil Map Unit Name: SfA - San Ysidro sandy loam, thick surface , 0 to 2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes X	No	

Remarks: This data point is located between the wingwalls of a concrete box culvert located under Midway Road. Over 18 inches of ponded water are situated within a defined bed and bank, and an ordinary high water mark is present on the wingwalls. This is an "other waters of the U.S." Mapped as intermittent drainage 1 on map.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	**0**
FACW species	x2 =	**0**
FAC species	x3 =	**0**
FACU species	x4 =	**0**
UPL species	x5 =	**0**
Column Totals: **0** (A)		**0** (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%
_____ Prevalence Index is ≤3.0[1]
_____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Unvegetated, open water.

SOIL

Sampling Point: DP-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
N/A	N/A	N/A						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** **X**

Remarks: No soils present; this data point is located between the wingwalls of a concrete box culvert.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- x Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** **X** **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 01/23/18
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-02
Investigator(s): Matt Hirkala Section, Township, Range: Rancho Los Putos Civil Land Grant
Landform (hillslope, terrace, etc.): Backslope Local relief (concave, convex, none): none Slope (%): 60
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.416954 Long: -121.9525974 Datum: NAD 83
Soil Map Unit Name: SfA - San Ysidro sandy loam, thick surface , 0 to 2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes x No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: This data point, which is approximately 6 feet higher in elevation than data point DP-01, is located outside of the concrete wingwalls on the graded foundation of Midway Road.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 20'x20')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Eucalyptus globulus*	90	Y	UPL
2.			
3.			
4.			
	90 =Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: 4'x4')			
1. *Bromus diandrus*	80	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80 =Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **2** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**170**	x5 =	**850**
Column Totals:	**170** (A)		**850** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:

- _____ Dominance Test is >50%
- _____ Prevalence Index is ≤3.0[1]
- _____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Unvegetated, disked Lolium

SOIL

Sampling Point: DP-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10yr 3/3	60					grav. clay loam	Two matrix colors
	10yr 6/6	40					grav. clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks: The soils appear to represent disturbed fill material used for the construction of Midway Road. No redoximorphic features present.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: No wetland hydrology indicators present.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 10/19/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-03
Investigator(s): Daria Snider Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): conave Slope (%): <2
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41698424 Long: -121.9517834 Datum: NAD 83
Soil Map Unit Name: SfA - San Ysidro sandy loam, thick surface , 0 to 2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Point selected in roadside drainage ditch (DD-1) with sparse vegetation. Mapped as a waters of the US at the ordinary high water mark. Paired with sampling point 4.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: _____)			
1. *Unvegetated*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**0**	x5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **#DIV/0!**

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Primarily unvegetated with sparse Cichorium intybus, Centromadia fitchii, and Dittrichia graveolens.

SOIL

Sampling Point: DP-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
NA								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks: No soils data collected.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- X Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 10/19/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-04
Investigator(s): Daria Snider Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): drainage ditch Local relief (concave, convex, none): conave Slope (%): <2
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41697637 Long: -121.9517847 Datum: NAD 83
Soil Map Unit Name: SfA - San Ysidro sandy loam, thick surface , 0 to 2% slopes NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	X
Hydric Soil Present?	Yes	No	X
Wetland Hydrology Present?	Yes	No	X

Is the Sampled Area within a Wetland? Yes _____ No X

Remarks: Sampling point is located within upland ruderal area and is paired with sampling point 3.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	=Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

Herb Stratum (Plot size: 1 sq. meter)			
1. *Avena fatua*	45	Y	UPL
2. *Convolvulus arvensis*	5	N	UPL
3. *Lepidium latifolium*	10	N	FAC
4. *Bromus hordeaceus*	10	N	FACU
5. *Hordeum marinum*	10	N	FAC
6. *Elymus caput-medusae*	10	N	UPL
7. *Centaurea solstitialis*	10	N	UPL
8.			
	100	=Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	20	x3 =	60
FACU species	10	x4 =	40
UPL species	70	x5 =	350
Column Totals:	100	(A)	450 (B)

Prevalence Index = B/A = 4.5

Hydrophytic Vegetation Indicators:

- _____ Dominance Test is >50%
- _____ Prevalence Index is ≤3.0[1]
- _____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- _____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Moved annual grassland

SOIL

Sampling Point: DP-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10 YR 3/2	100					Clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Rock

Depth (inches): 3

Hydric Soil Present? **Yes** ___ **No** X

Remarks: Shovel refusal at 3 inches.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 10/19/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-05
Investigator(s): Daria Snider Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): valley floor Local relief (concave, convex, none): none Slope (%): 2-5
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41699023 Long: -121.9512805 Datum: NAD 83
Soil Map Unit Name: CvD2 - Corning gravelly loam, 2 to 15% slopes, eroded NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Sampling point located within an upland ruderal area and is paired with sampling point 6.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: 1 sq. meter)			
1. *Bromus diandrus*	100	Y	UPL
2. *Centaurea solstitialis*	t	N	UPL
3. *Raphanus sativus*	t	N	UPL
4. *Avena fatua*	t	N	UPL
5.			
6.			
7.			
8.			
	100 =Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**100**	x5 =	**500**
Column Totals:	**100** (A)		**500** (B)

Prevalence Index = B/A = **5.0**

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Disked lolium is remaining cover

SOIL

Sampling Point: DP-05

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10yr 3/3	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 10/19/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-06
Investigator(s): Daria Snider Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): Concave Slope (%): 5-Feb
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41697008 Long: -121.9512884 Datum: NAD 83
Soil Map Unit Name: CvD2 - Corning gravelly loam, 2 to 15% slopes, eroded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Sampling point located within a linear roadside seasonal wetland and is paired within sampling point 5.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		
Herb Stratum (Plot size: 1 sq. meter)			
1. *Lythrum hyssopifolium*	60	Y	OBL
2. *Festuca perennis*	1	N	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	61 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 0 % Cover of Biotic Crust 39

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	60	x1 =	60
FACW species	0	x2 =	0
FAC species	1	x3 =	3
FACU species	0	x4 =	0
UPL species	0	x5 =	0
Column Totals:	61 (A)		63 (B)

Prevalence Index = B/A = **1.0**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: DP-06

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10yr 3/2	75	10yr 4/6	25	C	M	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Clay

Depth (inches): 4"

Hydric Soil Present? **Yes** X **No** ___

Remarks: Shovel refusal at 4"

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- X Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- x Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 10/06/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-7
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): concave Slope (%): 10
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41655526 Long: -121.9471889 Datum: NAD 83
Soil Map Unit Name: CvD2 - Corning gravelly loam, 2 to 15% slopes, eroded NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: * Above average rain year. Site was disked in May. Upslope (outside) of seasonal wetland 2 on map.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: 1 sq. meter)			
1. *Festuca bromoides*	10	N	FACU
2. *Avena fatua*	40	Y	UPL
3. *Convolvulus arvensis*	1	N	UPL
4.			
5.			
6.			
7.			
8.			
	51 =Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 49 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **#DIV/0!** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**10**	x4 =	**40**
UPL species	**41**	x5 =	**205**
Column Totals:	**51** (A)		**245** (B)

Prevalence Index = B/A = **4.8**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: DP-07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 4/2	100					Silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** ___ **No** X

Remarks: SL=silty loam

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 10/06/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-8
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41655526 Long: -121.9471889 Datum: NAD 83
Soil Map Unit Name: CvD2 - Corning gravelly loam, 2 to 15% slopes, eroded NWI Classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: * Above average rain year. Site was disked in May. Within seasonal wetland 2 on map.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		
Herb Stratum (Plot size: 1 sq. meter)			
1. *Hordeum marinum*	25	Y	FAC
2. *Festuca perennis*	25	Y	FAC
3. *Convolvulus arvensis*	1	N	UPL
4.			
5.			
6.			
7.			
8.			
	51 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 49 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	50	x3 =	150
FACU species	0	x4 =	0
UPL species	1	x5 =	5
Column Totals:	51 (A)		155 (B)

Prevalence Index = B/A = 3.0

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptation (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

SOIL

Sampling Point: DP-08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 4/4	100	5 yr 4/4	15	PL	M	cobbly loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: SL=silty loam

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-09
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): valley floor Local relief (concave, convex, none): none Slope (%): 2
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.415571 Long: -121.949498 Datum: NAD 83
Soil Map Unit Name: Corning gravelly loam, 2-15% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? Nc (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks: Undisked portion of site, has been disked in the past. Sampling point located within seasonal wetland 10 and is paired with sampling point 10.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	=Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

Herb Stratum (Plot size: 1 sq. meter)			
1. *Croton setigerus*	40	Y	UPL
2. *Lythrum hyssopifolium*	5	N	OBL
3. *Lastheria glabberima*	15	Y	OBL
4. *Veronica peregina*	1	N	FAC
5. *Rumex crispus*	5	N	FAC
6. *Festuca perennis*	10	N	FAC
7. *Mimulus guttatus*	5	N	OBL
8. *Centromadia fitchii*	5	N	FACU
	86	=Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 4 % Cover of Biotic Crust 10

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	25	x1 =	25
FACW species	0	x2 =	0
FAC species	16	x3 =	48
FACU species	5	x4 =	20
UPL species	40	x5 =	200
Column Totals:	86	(A)	293 (B)

Prevalence Index = B/A = 3.4

Hydrophytic Vegetation Indicators:

- _____ Dominance Test is >50%
- _____ Prevalence Index is ≤3.0[1]
- _____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: Mapped similar seasonal weltand croton dominated habitat adjacent. Prevalence Index (PI) is skewed by the dominance of Croton setigerus, plant typically found in seasonal wetlands late in the growing season, despite it's upland indicator status. If Croton is excluded the PI is 2.

SOIL

Sampling Point: DP-09

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 3/2	90	10yr 5/4	5	C	M	SL	
			5yr 5/6	5	C	M/PL	SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- x Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-10
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): valley floor Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.415571 Long: -121.949436 Datum: NAD 83
Soil Map Unit Name: Corning gravelly loam, 2-15% slopes, eroded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Sampling point located within a ruderal upland area and is paired with point 9.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	=Total Cover	

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

Herb Stratum (Plot size: 1 sq. meter)			
1. *Centaurea solstitialis*	70	Y	UPL
2. *Croton setigerus*	5	N	UPL
3. *Lythrum hyssopifolium*	5	N	OBL
4.			
5.			
6.			
7.			
8.			
	80	=Total Cover	

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 20 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	**5**	x1 =	**5**
FACW species	**0**	x2 =	**0**
FAC species	**0**	x3 =	**0**
FACU species	**0**	x4 =	**0**
UPL species	**75**	x5 =	**375**
Column Totals:	**80** (A)		**380** (B)

Prevalence Index = B/A = **4.8**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: 20% dead lolium

SOIL

Sampling Point: DP-10

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/2	90	10yr 6/6	10	C	M	Silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-11
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): valley floor Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41524 Long: -121.95197 Datum: NAD 83
Soil Map Unit Name: Capay silty clay loam NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Hydric Soil Present?	Yes **X**	No ____	
Wetland Hydrology Present?	Yes ____	No **X**	

Remarks: Sampling point located within an upland. Disked gravel road near gravel pile and berm.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: 1 sq. meter)			
1. *Xanthium strumarium*	30	Y	FAC
2. *Rumex crispus*	15	N	FAC
3. *Croton setigerus*	5	N	UPL
4.			
5.			
6.			
7.			
8.			
	50 =Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 50* % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **1** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**45**	x3 =	**135**
FACU species	**0**	x4 =	**0**
UPL species	**5**	x5 =	**25**
Column Totals:	**50** (A)		**160** (B)

Prevalence Index = B/A = **3.2**

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

____ Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes **X** No ____

Remarks: *Dead Lolium thatch. Phalaris, Leontodon, Yellow star thistle, Avena sp. adjacent.

SOIL

Sampling Point: DP-11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10yr 3/2	90	10yr 6/4	5	C	M	sandy loam	cobble
			5yr 4/6	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks: very cobbly/gravelly. Disked gravel road, shovel refusal at 8".

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-12
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): filled swale Local relief (concave, convex, none): concave Slope (%): <2
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41489 Long: -121.951261 Datum: NAD 83
Soil Map Unit Name: Capay silty clay loam NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Seasonal wetland, previous filled upslope by soil piles. Not disked or disturbed. Sampling point paired with sample point 13.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		
Herb Stratum (Plot size: 1 sq. meter)			
1. *Eleocharis macrostachya*	30	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	30 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ =Total Cover		

% Bare Ground in Herb Stratum 70* % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	30	x1 =	30
FACW species	0	x2 =	0
FAC species	0	x3 =	0
FACU species	0	x4 =	0
UPL species	0	x5 =	0
Column Totals:	30 (A)		30 (B)

Prevalence Index = B/A = 1.0

Hydrophytic Vegetation Indicators:

X Dominance Test is >50%

X Prevalence Index is ≤3.0[1]

____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: Dead *Elymus repens* and remains of a tree. *70% thatch/dead material.

SOIL

Sampling Point: DP-12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10yr 3/1	88	10yr 4/4	5	C	M	silty loam	
			5 yr 5/6	5	C	PL		
			7.5yr 5/6	2	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- x Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-13
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.414857 Long: -121.951274 Datum: NAD 83
Soil Map Unit Name: Capay silty clay loam NWI Classification: none
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Sampling point located within disked upland ruderal area. Paired with sampling point 12.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: 1 sq. meter)			
1. *Croton setigerus*	10	Y	UPL
2. *Lythrum hyssopifolium*	1	N	OBL
3. *Lysimachia aruensis*	1	N	FAC
4.			
5.			
6.			
7.			
8.			
	12 =Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 88 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	1	x1 =	1
FACW species	0	x2 =	0
FAC species	1	x3 =	3
FACU species	0	x4 =	0
UPL species	10	x5 =	50
Column Totals:	12 (A)		54 (B)

Prevalence Index = B/A = **4.5**

Hydrophytic Vegetation Indicators:

____ Dominance Test is >50%
____ Prevalence Index is ≤3.0[1]
____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks:

SOIL

Sampling Point: DP-13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10yr 3/2	90	10yr 5/4	5	D	M	silty loam	
			7.5yr 4/6	5	C	M/PL		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks: Disked soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Oxidized rhizospheres are not on living roots.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-14
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): Valley floor Local relief (concave, convex, none): concave Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.415334 Long: -121.946699 Datum: NAD 83
Soil Map Unit Name: San Ysidro sandy loam, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	No	X
Hydric Soil Present?	Yes	X	No
Wetland Hydrology Present?	Yes	X	No

Is the Sampled Area within a Wetland? Yes _____ No X

Remarks: * Above average rain year. Site was disked in May. DP-01 area was not disked due to adjacent rock outcropping, but disking occurred adjacent. Sampling point located within upland ruderal area.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	=Total Cover	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

Herb Stratum (Plot size: 1 sq. meter)			
1. *Lythrum hyssopifolium*	10	Y	OBL
2. *Leontodon saxatilis*	20	Y	FACU
3. *Veronica peregrina*	1	N	FAC
4. *Hordium marinum*	2	N	FAC
5. *Centaurea solstitialis*	5	N	UPL
6. *Croton setigerus*	5	N	UPL
7.			
8.			
	43	=Total Cover	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
		=Total Cover	

% Bare Ground in Herb Stratum 25 % Cover of Biotic Crust 32

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	10	x1 =	10
FACW species	0	x2 =	0
FAC species	3	x3 =	9
FACU species	20	x4 =	80
UPL species	10	x5 =	50
Column Totals:	43	(A)	149 (B)

Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%
_____ Prevalence Index is ≤3.0[1]
_____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Both upland and obligate plants are green and growing in spite of dry weather/heat. Question the obligate status of lythrum in this case?

SOIL

Sampling Point: DP-14

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/2	80	10yr 6/6	20	C	M	SL	
6-18	10yr 3/2	100					SL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: SL=silty loam

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- X Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-15
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): valley floor Local relief (concave, convex, none): concave Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.415091 Long: -121.947465 Datum: NAD 83
Soil Map Unit Name: San Ysidro sandy loam, 0-2% slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Located in disked upland area with an aerial signature.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: 1 sq. meter)			
1. *Rumex crispus*	10	N	FAC
2. *Heliotropium europaeum*	15	Y	UPL
3. *Croton setigerus*	5	N	UPL
4. *Asclepias fascicularis*	5	N	FAC
5.			
6.			
7.			
8.			
	35 =Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **0** (A)

Total Number of Dominant Species Across All Strata: **1** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	**0**	x1 =	**0**
FACW species	**0**	x2 =	**0**
FAC species	**15**	x3 =	**45**
FACU species	**0**	x4 =	**0**
UPL species	**20**	x5 =	**100**
Column Totals:	**35** (A)		**145** (B)

Prevalence Index = B/A = **4.1**

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Disked lolium is remaining cover

SOIL

Sampling Point: DP-15

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10yr 3/2	80	10yr 6/6	20	C	M	silty loam	cobbles

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks: Shovel refusal at 6". Soil is very gravely/cobbly

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-16
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): Drainage swale Local relief (concave, convex, none): concave Slope (%): <5
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.414542 Long: -121.946022 Datum: NAD 83
Soil Map Unit Name: San Ysidro sandy loam,0-2%slopes NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: In drainage swale near drop inlet. No ordinary high water mark evident.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: 1 sq. meter)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		

Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	0	x3 =	0
FACU species	0	x4 =	0
UPL species	0	x5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = 0.0

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Unvegetated, disked annual grasses.

SOIL

Sampling Point: DP-16

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10yr 3/2	80	10yr 6/6	20	C	M	silty loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: Soils are disturbed/disked.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vacaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-17
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): <3
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.41533388 Long: -121.9466988 Datum: NAD 83
Soil Map Unit Name: Capay silty clay loam NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes ____	No X	

Remarks: Site is ripped and mowed on an annual basis. Sampling point located within an upland ruderal area that was recently disked.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		
Herb Stratum (Plot size: ____)			
1. *unvegetated*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum ____ % Cover of Biotic Crust ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ____ (A)

Total Number of Dominant Species Across All Strata: ____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:
OBL species	x1 =	**0**
FACW species	x2 =	**0**
FAC species	x3 =	**0**
FACU species	x4 =	**0**
UPL species	x5 =	**0**
Column Totals: **0** (A)		**0** (B)

Prevalence Index = B/A = **0.0**

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: Remnants of Veronica peregrina, Lythrum hyssopifolium, Festuca perrennis and Hordium marnum in tilled soil. Croton, Rumex Asclepias and Chenopodium sp.

SOIL

Sampling Point: DP-17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10yr 3/2	90	5yr 5/6	5	C	M/PL	silty loam	
			5yr 3/4	5	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- x Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: none

Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks: Tilled Soil. Mg concentrated in soft masses 2%

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes ___	No X	Depth (inches): ___
Saturation Present? (includes capillary fringe)	Yes ___	No X	Depth (inches): ___

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: 700 Crocker City/County: Vavaville, Solano County Sampling Date: 06/22/17
Applicant/Owner: Crocker Land Holdings State: CA Sampling Point: DP-18
Investigator(s): Bonnie Peterson Section, Township, Range: Section 35, Township 7 North, Range 1 West
Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): <1
Subregion (LRR): Mediterranean California (LRR C) Lat: 38.413619 Long: -121.948762 Datum: NAD 83
Soil Map Unit Name: Capay silty clay loam NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation Y, Soil Y, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes Y No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: Sampling point located within upland ruderal area that was recently disked.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0 =Total Cover		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	0 =Total Cover		

Herb Stratum (Plot size: _____)			
1. *unvegetated*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	0 =Total Cover		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	=Total Cover		

% Bare Ground in Herb Stratum 100 % Cover of Biotic Crust 0

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **0%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:			Multiply by:
OBL species	0	x1 =	0
FACW species	0	x2 =	0
FAC species	0	x3 =	0
FACU species	0	x4 =	0
UPL species	0	x5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = **0.0**

Hydrophytic Vegetation Indicators:

_____ Dominance Test is >50%
_____ Prevalence Index is ≤3.0[1]
_____ Morphological Adaptationd[1] (Provide supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No X

Remarks: Disked annual grassland with no living vegetation.

SOIL

Sampling Point: DP-18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10yr 3/2	100					sandy loam	gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) (**LRR C**)
- ___ 1 cm Muck (A9) (**LRR D**)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Vernal Pools (F9)

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) (**LRR C**)
- ___ 2 cm Muck (A10) (**LRR B**)
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1) (**Nonriverine**)
- ___ Sediment Deposits (B2) (**Nonriverine**)
- ___ Drift Deposits (B3) (**Nonriverine**)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Biotic Crust (B12)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water Marks (B1) (**Riverine**)
- ___ Sediment Deposits (B2) (**Riverine**)
- ___ Drift Deposits (B3) (**Riverine**)
- ___ Drainage Patterns (B10)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): _____

Water Table Present? Yes ___ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): _____

Wetland Hydrology Present? **Yes** ___ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Attachment B

Aquatic Resourced Delineation Map

AQUATIC RESOURCE FEATURES

WETLANDS

Seasonal Wetland

Feature ID	Acreage
SW-1	0.015
SW-2	0.005
SW-3	0.005
SW-4	0.002
SW-5	<0.001
SW-6	0.008
SW-7	0.013
SW-8	0.002
SW-9	0.018
SW-10	0.068
SW-11	0.009
SW-12	0.002
SW-13	0.007
SW-14	0.033
Total:	**0.187**

OTHER WATERS

Drainage Ditch

Feature ID	Acreage	Linear Feet
DD-1	0.010	180
	0.010	**180**

Intermittent Drainage

Feature ID	Acreage	Linear Feet
ID-1	0.004	12
ID-2	0.884	1,458
ID-3	0.014	40
ID-4	0.038	74
	0.940	**1,584**

Non-Jurisdictional Canal

Feature ID	Acreage	Linear Feet
Canal	0.500	1,095
	0.500	**1,095**

Total:	**1.450**	**2,859**
Aquatic Resources Total:	**1.637 acres**	

Project Name: 700 Crocker Drive
Map Title: Aquatic Resources Delineation
Path: P:\700 Crocker Drive - 17038\Maps\Attachment_JARD_2018.mxd
Date Map Prepared: 8 February 2018

Notes:
Main Map Scale: 1 inch = 100 feet
Inset Map Scale: 1 inch = 50 feet
Coordinate System: California State Plane (CORS96), Zone II (FIPS 0402)
Datum: NAD83
Projection: Lambert Conformal Conic
Aerial Base: USDA, National Agriculture Imagery Program
Aerial Base Flown: 8 July 2016
Date Map Prepared: 8 February 2018
Map Prepared by: N. Bente, M. Hirkaka
Delineation Performed by: B. Peterson, D. Snider. M. Hirkala
Definitions:
USDA = United States Department of Agriculture

N
0 75 150 300
Feet

Prepared For:

Alan Hersh
c/o LDK Ventures
3140 Peacekeeper Way
McClellan, CA 95652

Study Area Boundary (65 acres)
Reference Point (decimal degrees, NAD83)
Data Point

Aquatic Resources (1.637 acres)

Wetlands
Seasonal Wetland (0.187 acre)

Other Waters
Drainage Ditch (0.010 acre)
Intermittent Drainage (0.940 acre)
Non-Jurisdictional Canal (0.500 acre)

Aquatic Resources Delineation
700 Crocker Drive

City of Vacaville, Solano County, California

MADRONE ECOLOGICAL CONSULTING
8421 Auburn Boulevard, Suite 248
Citrus Heights, California 95610
(916) 822.3220 | www.madroneeco.com

Attachment C

Plant Species Observed within the Study Area

Plant Species Observed within the 700 Crocker Drive Study Area 2017

Species Name	Common Name	Wetland Indicator Status
Acer negundo	Box elder	FACW
Achillea millefolium	Yarrow	FAC
Achyrachaena mollis	Blow wives	FAC
Acmispon americanus var. americanus	Spanish lotus	UPL
Alopecurus saccatus	Pacific foxtail	OBL
Amaranthus albus	Tumbleweed	FACU
Arundo donax	Giant reed	FACW
Asclepias fascicularis	Narrow-leaf milkweed	FAC
Avena barbata	Slender wild oat	UPL
Avena fatua	Wild oat	UPL
Baccharis pilularis subsp. pilularis	Coyote brush	UPL
Brassica nigra	Black mustard	UPL
Brassica rapa	Field mustard	FACU
Bromus diandrus	Ripgut grass	UPL
Bromus hordeaceus	Soft chess	FACU
Calandrinia menziesii	Red maids	FACU
Carduus pycnocephalus subsp. pycnocephalus	Italian thistle	UPL
Centromadia fitchii	Fitch's spikeweed	FACU
Centaurea solstitialis	Yellow star-thistle	UPL
Cerastium glomeratum	Sticky mouse-ear chickweed	UPL
Euphorbia serpyllifolia	Thyme-leafed spurge	UPL
Chenopodium album	Lamb's quarters	FACU
Cichorium intybus	Chicory	FACU
Convolvulus arvensis	Bindweed	UPL
Croton setiger	Turkey-mullein	UPL
Cynodon dactylon	Bermuda grass	FACU
Cyperus eragrostis	Tall nutsedge	FACW
Dittrichia graveolens	Stinkwort	UPL
Eleocharis macrostachya	Creeping spikerush	OBL
Elymus caput-medusae	Medusa head	UPL
Epilobium ciliatum subsp. ciliatum	Fringed willow-herb	FACW
Erigeron canadensis	Horseweed	FACU
Erodium botrys	Filaree	FACU
Eucalyptus globulus	Blue gum	UPL
Festuca bromoides	Brome fescue	FACU
Festuca myuros	Rattail sixweeks grass	FACU
Festuca perennis	Rye grass	FAC
Ficus carica	Edible fig	FACU

Geranium molle	Geranium molle	UPL
Helminthotheca echioides	Bristly ox-tongue	FAC
Hordeum marinum subsp. gussoneanum	Mediterranean barley	FAC
Hypochaeris glabra	Smooth cat's-ear	UPL
Juncus bufonius	Toad rush (group 1)	FACW
Lepidium latifolium	Perennial pepperweed	FAC

Attachment D

Representative Site Photographs

Representative Site Photo, seasonal wetland 9.

Representative Site Photo, Gibson Canyon Creek.

Representative Site Photo, seasonal wetland 11.

Representative Site Photo, seasonal wetland 2.

Representative Site Photo, seasonal wetland 1.

Representative Site Photo, seasonal wetland 14.

Representative Site Photo, disked uplands.

Representative Site Photo, Kilkenny Canal 3.

Attachment E

GIS Shapefiles and the Aquatic Resources Excel Spreadsheet (on CD)

Attachment F

Access Letter

Project Manager
Regulatory Division
U.S. Army Corps of Engineers
1325 J Street, Room 1350
Sacramento, California 95814-2922

Re: 700 Crocker Drive Study Area Access

This letter serves as written permission to enter the 700 Crocker Drive Study Area shown on the attached Figure 1 when accompanied by Madrone Ecological Consulting, LLC (Madrone) staff. This is a secure site and access must be pre-arraigned with on-site staff. When accompanied by Madrone staff, you may dig soil pits by hand and collect plant materials related to the verification of potential Waters of the U.S. on the subject property. If you have any questions, please contact Sarah VonderOhe at Madrone (916) 822-3230 or svonderohe@madroneeco.com.

Sincerely,

Appendix E, Table 3.4-1a: List of Special-Status Plant Species With Low or No Potential to Occur in the Vicinity of the Proposed Project

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Astragalus tener var. *ferrisiae* Ferris' milk-vetch	CRPR 1B.1	•Meadows •Valley and foothill grassland (vernally mesic) •Usually found in dry adobe soils and alkaline/saline soils	April-May	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Astragalus tener var. *tener* Alkali milk-vetch	CRPR 1B.2	•Wetlands •Alkaline playas and vernal pools in grasslands with adobe clay soils. •Alkaline and seasonally moist meadows from 0 to 200 feet in elevation	March-June	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Atriplex cordulata var. cordulata Heartscale	CRPR 1B.2	•Grasslands with sandy alkaline or saline soils	April-October	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Atriplex depressa Brittlescale	CRPR 1B.2	•Meadows or grasslands with alkaline or saline clay soils	April-October	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Atriplex persistens Vernal pool smallscale	CRPR 1B.2	•Vernal pools or other seasonal wetlands with alkaline soils	June, August-October	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Calochortus pulchellus Mt. Diablo fairy-lantern	CRPR 1B.2	•Wooded slopes •Rarely found in chaparral habitats	April-June	No	**No habitat present.** No wooded slopes or chaparral present on the project site.
Centromadia parryi ssp. *parryi* Pappose tarplant	CRPR 1B.2	•Often alkaline soils •Chaparral •Coastal prairie •Meadows and seeps •Marshes and swamps (coastal salt) •Valley and foothill grassland (vernally mesic)	May-November	No	**No habitat present.** Alkaline/saline soils are not present on the project site.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Chloropyron molle ssp. hispidum Hispid bird's-beak	CRPR 1B.1	•Seasonally flooded, alkaline/saline soils at elevations below 500 feet	June-September	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Cicuta maculata var. bolanderi Bolander's water-hemlock	CRPR 2B.1	•Brackish or freshwater marshes and swamps	July-September	No	**No habitat present.** Marshes or swamps are not present on the project site.
Delphinium recurvatum Recurved larkspur	CRPR 1B.2	•Chenopod scrub •Cismontane woodland •Valley and foothill grassland/alkaline	March-June	Yes	**No habitat present.** The nearest recorded CNDDB occurrence is approximately 1.2 miles west of the project site; however, field survey results determined suitable habitat is not present on the project site. Alkaline/saline soils are not present on the project site.
Etriplex joaquinana San Joaquin spearscale	CRPR 1B.2	•Seasonal alkali wetlands or sinks with scrub	April-October	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Fritillaria pluriflora Adobe-lily	CRPR 1B.2	•Often serpentine or adobe soils •Chaparral •Cismontane woodland •Valley and foothill grassland	February-April	Yes	**No habitat present.** Serpentine soils are not present on the project site.
Gilia capitata ssp. tomentosa Wooly-headed gilia	CRPR 1B.1	•Serpentine, rocky outcrops •Coastal bluff scrub •Valley and foothill grasslands	May -July	No	**No habitat present.** Serpentine soils are not present on the project site.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Gratiola heterosepala Bogg's Lake hedge-hyssop	SE, CRPR 1B.2	•Vernal pools and lake/pond margins	April-August	No	**No habitat present.** Suitable aquatic habitats are not present on the project site.
Hesperolinon breweri Brewer's western flax	CRPR 1B.2	•Usually rocky, serpentinite •Chaparral •Cismontane woodland •Valley and foothill grassland	May-July	Yes	**No habitat present.** Suitable aquatic habitats are not present on the project site.
Hibiscus lasiocarpus var. occidentalis Woolly rose-mallow	CRPR 1B.2	•Freshwater-saturated riverbanks and low peat islands in sloughs at elevations below 360 feet. •Riprap	June-September	No	**No habitat present.** Suitable aquatic habitats are not present on the project site.
Isocoma arguta Carquinez goldenbush	CRPR 1B.1	•Prefers foothill/valley grasslands with alkaline soils. Seems to favor low benches near drainages.	August-December	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Lasthenia conjugens Contra Costa goldfields	CRPR 1B.1	•Mesic. •Cismontane woodland •Playas (alkaline) •Valley and foothill grassland •Vernal pools	March-June	No	**Low potential to occur.** This species is usually found in relatively deep vernal pools. This species requires a deeper restrictive layer "depth to bedrock" (~128cm) than available in the project site (~33cm). No observations were reported during the field survey. Additionally, the nearest CNDDB recorded occurrence is approximately 5.2 miles south of the project site.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Lathyrus jepsonii var. jepsonii Delta tule pea	CRPR 1B.2	• Prefers tidally influenced channels, brackish marshes and swamps below 15 feet.	May-July (August-September)	No	**No habitat present.** Marshes and swamps are not present on the project site.
Layia septentrionalis Colusa layia	CRPR 1B.2	•Favors chaparral, cismontane woodland, or foothill grasslands with sandy or serpentine soils.	April-May	No	**No habitat present.** Serpentine soils are not present on the project site.
Legenere limosa Legenere	CRPR 1B.1	•Vernal pools or other seasonal wetlands with prolonged inundation.	April-June	Yes	**No habitat present.** Seasonal wetlands on the project site do not have a sufficient hydroperiod.
Lepidium latipes var. heckardii Heckard's pepper-grass	CRPR 1B.2	• This annual prefers valley and foothill grasslands with alkaline soils.	March-May	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Leptosiphon jepsonii Jepson's leptosiphon	CRPR 1B.2	•Favors chaparral, cismontane woodland, or foothill grasslands with volcanic serpentine soils.	March-May	No	**No habitat present.** Volcanic serpentine soils are not present on the project site.
Lilaeopsis masonii Mason's lilaeopsis	SR, CRPR 1B.1	• Prefers brackish or freshwater swamps, intertidal marshes, and riparian scrub at or below 35 feet.	April-November	No	**No habitat present.** Marshes and swamps are not present on the project site.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Limosella australis Delta mudwort	CRPR 2B.1	•Favors freshwater and brackish marshes, swamps, or riparian scrub. Usually found in association with muddy banks in the Delta.	May-August	No	**No habitat present.** Outside of known range of the species.
Malacothamnus helleri Heller's bush-mallow	CRPR 3.3	•Chaparral or riparian woodland	May-July	No	**No habitat present.** Chaparral and riparian woodland habitats are not present on the project site.
Myosurus minimus ssp. apus Little mousetail	CRPR 3.1	•Alkaline vernal pools	March-June	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Neostapfia colusana Colusa grass	FT, CRPR 1B.1	• Vernal pools (adobe, large)	May-August	No	**No habitat present.** Seasonal wetlands on the project site do not have a sufficient hydroperiod.
Orcuttia inaequalis San Joaquin Valley Orcutt grass	FE, SE, CRPR 1B.1	•Vernal pools	April – September	No	**Low potential to occur.** This species is usually found in relatively deep vernal pools. No observations were recorded during the field survey. The nearest CNDDB-recorded occurrence is approximately10 miles southeast of the project site.
Puccinellia simplex California alkali grass	CRPR 1B.2	•Alkaline sinks, flats, and lake margins, vernal pools, meadows, seeps, and riparian wetlands.	March-May	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Sidalcea keckii Keck's checker-mallow	FE, 1B.1	•Cismontane woodland • Valley and foothill grassland	April- June	No	**No habitat present.** The project site is outside the known elevational range of the species.
Stuckenia filiformis ssp. alpina slender-leaved pondweed	CRPR 2B.2	•Marshes, swamps, and shallow clear water of lakes and drainage channels.	May-July	No	**No habitat present.** Suitable aquatic habitat is not present on the project site.

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**Flowering Period**	**Recorded Occurrence within Five Miles?**	**Likelihood for Occurrence**
Symphyotrichum lentum Suisun Marsh aster	CRPR 1B.2	•Fresh and salt water marshes, often associated with blackberries, cattails, and bulrush.	(April) May-November	No	**No habitat present.** Marshes and swamps are not present on the project site.
Trifolium amoenum Two-fork (showy Indian) clover	FE, CRPR 1B.1	•Coastal bluff scrub •Valley and foothill grassland (sometimes serpentinite)	April-June	Yes	**Low potential to occur.** This species was known to occur approximately 3 miles southwest of the project site. The CNDDB recorded occurrence dates from 1892. No observations were recorded during the field survey.
Trifolium hydrophilum Saline clover	CRPR 1B.2	• Marshes, swamps, and vernal pools with alkaline soils.	April-June	No	**No habitat present.** Alkaline/saline soils are not present on the project site.
Tuctoria mucronata Solano grass	CRPR 1B.2	•Sometimes roadsides. •Valley and foothill grassland	April-November	No	**Low potential to occur.** Seasonal wetlands on the project site likely do not have a sufficient hydroperiod.
Viburnum ellipticum Oval-leaved viburnum	CRPR 2B.3	•Prefers chaparral and cismontane woodlands, and lower cismontane coniferous forests at elevations from 700 feet to 4,600 feet.	May-June	No	**No habitat present.** The project site is outside the known elevational range of the species.

Scientific Name Common Name	Status	Habitat Characteristics	Flowering Period	Recorded Occurrence within Five Miles?	Likelihood for Occurrence

Notes:

Status definitions are as follows:

USFWS designations:

- FE Endangered: any species in danger of extinction throughout all or a significant portion of its range
- FT Threatened: any species likely to become endangered within the foreseeable future

CDFW designations:

- SE Endangered: any species in danger of extinction throughout all or a significant portion of its range
- ST Threatened: any species likely to become endangered within the foreseeable future
- SR Rare: any species not currently threatened with extinction, but in such small numbers throughout its range that it may become endangered if its present environment worsens

CNPS designations:

- 1A Species presumed extinct in California
- 1B Plants rare, threatened or endangered in California and elsewhere
- 2 Plants rare, threatened or endangered in California, but more common elsewhere
- 3 Plants about which we need more information - a review list

CNPS threat categories:

- .1 Seriously endangered in California
- .2 Fairly endangered in California
- .3 Not very endangered in California.

The likelihood of occurrence (low, moderate, high) is based on habitat requirements (such as substrate, hydrology, vegetation community, and disturbance factors) and range, applied by using the following general guidelines:

Low: Habitat within the study area and/or project vicinity satisfies very few of the species' requirements and/or the range of the species overlaps with the vicinity of the study area, but not with the study area itself. The species' presence within the study area is unlikely.

Moderate: Habitat within the study area and/or study area vicinity meets some of the species' requirements and known locations for the species are found in the vicinity of the study area. Presence of the species within the study area is moderately likely.

High: Habitat within the study area and/or study area vicinity meets most or all of the species' requirements and known locations of the species are found in proximity to the study area. Presence of the species within the study area is highly likely.

Source: (Biological Resources Assessment, Appendix B), (USFWS 2018), and (CDFW 2018a,b).

Appendix F, Table 3.4-2a: List of Special-Status Wildlife Species With Low or No Potential to Occur in the Vicinity of the Proposed Project

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**CNDDB Occurrence within Five Miles?**	**Likelihood for Occurrence**
Invertebrates				
Branchinecta conservatio Conservancy fairy shrimp	FE	Large turbid vernal pools and other seasonal wetlands. Within vernal pool complex, conservancy shrimp are sporadic in their distribution, often inhabiting one or a few pools within a widespread complex.	No	**Low potential to occur.** There is no suitable vernal pool habitat on the project site. Additionally, the nearest CNDDB-recorded occurrences are approximately 9 miles southeast of the project site. Branchiopod dry- and wet-season surveys did not find evidence of this species (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C).
Desmocerus californicus dimorphus Valley elderberry longhorn beetle	FT	Host larval plant is the elderberry; found primarily in riparian areas. Adult beetles lay eggs in elderberry stems 2-8 inches in diameter with some preference showed toward "stressed" elderberry bushes.	Yes	**No habitat present.** The nearest CNDDB occurrences is approximately 4.5 miles southwest of the project site; however, no elderberry species were observed onsite during the field surveys (Biological Resources Assessment; Appendix B; Davis, Tom, Stantec 2017).
Fish				
Hypomesus transpacificus Delta smelt	FT, SE	Inhabit the Sacramento-San Joaquin Delta estuary in open, shallow waters.	No	**No habitat present.** No suitable aquatic habitat on the project site.
Amphibians				
Ambystoma californiense California tiger salamander	FT, ST	Vernal pools and/or seasonal water sources; requires underground refuges in adjacent upland areas, especially ground squirrel burrows.	No	**Low potential to occur**. The nearest CNDDB occurrence is approximately 7.5 miles southeast of the project site.
Rana draytonii California red-legged frog	FT, SSC	Breeds in permanent to semi-permanent aquatic habitats including lakes, ponds, marshes, creeks, and other drainages.	No	**No habitat present.** The nearest CNDDB occurrences is more than 11 miles west of the project site. Aquatic resources on

Scientific Name **Common Name**	**Status**	**Habitat Characteristics**	**CNDDB Occurrence within Five Miles?**	**Likelihood for Occurrence**
				the project site do not pond long enough to provide suitable breeding or dispersal habitat.
Rana boylii Foothill yellow-legged frog	SCT	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats.	Yes	**No habitat present.** No suitable aquatic habitat found in the project vicinity. The nearest CNDDB occurrence is approximately 3.4 miles southwest of the project site.
Reptiles				
Emys marmorata Western pond turtle	SSC	Typically found in quiet waters of ponds, marshes, creeks, and irrigation ditches. Requires basking sites such as partially submerged logs, rocks, mats of floating vegetation, or open mud banks.	Yes	**Low potential to occur.** Gibson Canyon Creek is very ruderal within the project site and exists as only marginal-quality habitat for this species. The nearest CNDDB occurrence is approximately 2 miles southeast of the project site.
Thamnophis gigas Giant garter snake	FT, ST	Prefers freshwater marshes and low-gradient streams. Has adapted to drainage canals and irrigation ditches. This is the most aquatic of the garter snakes in California.	No	**No habitat present.** No suitable aquatic habitat on the project site. The nearest CNDDB occurrence is approximately 12 miles northeast of the project site.
Birds				
Agelaius tricolor Tricolored blackbird	SCE, SSC	Requires open water, protected nesting substrate, and foraging area with insect prey within a few kilometers of the colony.	No	**No habitat present.** No suitable nesting habitat occurs on or adjacent to the project site. The nearest CNDDB occurrence is approximately 6 miles south of the project site.
Aquila chrysaetos Golden eagle	FP	Forages in open areas including grasslands, savannahs, deserts, and early successional stages of shrub and forest communities. Nests in large trees and cliffs.	No	**No habitat present.** No suitable nesting habitat for this species occurs on the project site. The ruderal grassland is too fragmented to provide suitable foraging habitat for the species.
Asio flammeus Short-eared owl	SSC	Typically found in open areas with few trees such	No	**No habitat present.** No suitable nesting habitat

Scientific Name Common Name	Status	Habitat Characteristics	CNDDB Occurrence within Five Miles?	Likelihood for Occurrence
		as grasslands, prairies, dunes, meadows, and croplands.		for this species occurs on the project site. The ruderal grassland is too fragmented to provide suitable foraging habitat for the species.
Buteo regalis Ferruginous hawk	SSC	A wintering species in California. Forages in open areas such as grasslands and fields for ground squirrels as well as other small mammals, birds, lizards, snakes, and rabbits.	No	**No habitat present.** No suitable nesting habitat for this species occurs on the project site. The ruderal grassland is too fragmented to provide suitable foraging habitat for the species.
Haliaeetus leucocephalus Bald eagle	FD, SE, FP	Nest in large trees within 1 mile of lakes, rivers, or larger streams. Forages in nearby open areas.	No	**No habitat present.** Project site lacks large nest trees and foraging habitat for this species.
Mammals				
Taxidea taxus American badger	SSC	Prefers dry open stages of most shrub, forest, and herbaceous habitats. Requires sufficient food (feeds mostly on burrowing rodents), friable soils, and open, uncultivated ground.	Yes	**No habitat present.** The project is located outside of the normal range for this species.

Status designations:

Federal

- FE Listed as endangered under the federal Endangered Species Act
- FT Listed as threatened under the federal Endangered Species Act
- FD Delisted from the federal Endangered Species List

State of California

- FP California Fish and Game Code fully protected species
- SE California Fish and Game Code endangered species
- SSC California Fish and Wildlife species of special concern
- SCE Candidate for listing as endangered
- SCT Candidate for listing as threatened
- ST California Fish and Game Code threatened species

Other Listings:

- WBWG H or M Listed as High or Medium Priority on the Western Bat Working Group (WBWG) list

Source: (Biological Resources Assessment, Appendix B), (2017-18 Dry-Season & Wet-Season Branchiopod Survey 90-Day Report; Appendix C), (USFWS 2018), (Davis, Tom, Stantec 2017). and (CDFW 2018a, b).

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Cultural Resources Inventory and Evaluation Report 700 Crocker

Solano County, California

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January 30, 2018

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 supervision, and monitoring and compliance reporting.

Citation: ECORP Consulting, Inc. 2018. Redacted for public Distribution Cultural Resources Inventory and Evaluation Report for the 700 Crocker Project. Solano County, California. Prepared for LDK-AREP III Placer Associates. 30 January 2018.

MANAGEMENT SUMMARY

In 2017, ECORP Consulting, Inc. was retained to conduct a cultural resources inventory and evaluation for the proposed 700 Crocker Project. LDK-AREP III Placer Associates proposes to develop an approximately 700,000-square-foot industrial building on approximately 56 acres of land located in northern Vacaville, Solano County, California.

The inventory included a records search, literature review, and field survey. The records search results indicated that no previous cultural resources studies have been conducted within the Project Area. As a result of the records search, one previously recorded cultural resource extends into the Project Area: [redacted]

As a result of the field survey, no new cultural resources were recorded inside the Project Area. ECORP evaluated [redacted] for eligibility for the National Register of Historic Places and California Register of Historical Resources and found the resource not eligible under any criteria. There are no identified Historic Properties or Historical Resources in the Project Area. Recommendations for the management of unanticipated discoveries are also provided.

This report has been redacted for public distribution. A full confidential version of this report is on file with the lead agency and is available for viewing by qualified individuals.

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Attachment B –Sacred Lands File Coordination
Attachment C – ***Redacted*** Project Area Photographs
Attachment D – ***Redacted*** Cultural Resource Site Locations and Site Records

1.0 INTRODUCTION

In 2017, ECORP Consulting, Inc. was retained by LDK-AREP III Placer Associates to conduct a cultural resources inventory of the proposed Project area located in the City of Vacaville, Solano County, California. A survey of the property was required to identify potentially eligible cultural resources (archaeological sites and historic buildings, structures, and objects) that could be affected by the Project.

1.1 Project Location and Description

The Project Area consists of approximately 56 acres of property located in the unsectioned portion of the Los Putos Land Grant of Township 7 North, Range 1 West, Mount Diablo Base and Meridian, as depicted on the 1973 Allendale, California U.S. Geologic Survey (USGS) 7.5' topographic quadrangle map (Figures 1 and 2). It is also known as Assessor Parcel Number (APN) 0106-240-340. The Project Area is located west of Interstate 505 and south of Midway Road in the City of Vacaville. An existing 840,450-square-foot industrial distribution building is located just south of the Project Area.

The proposed Project entails the construction a 700,000-square-foot industrial building and related utilities and infrastructure.

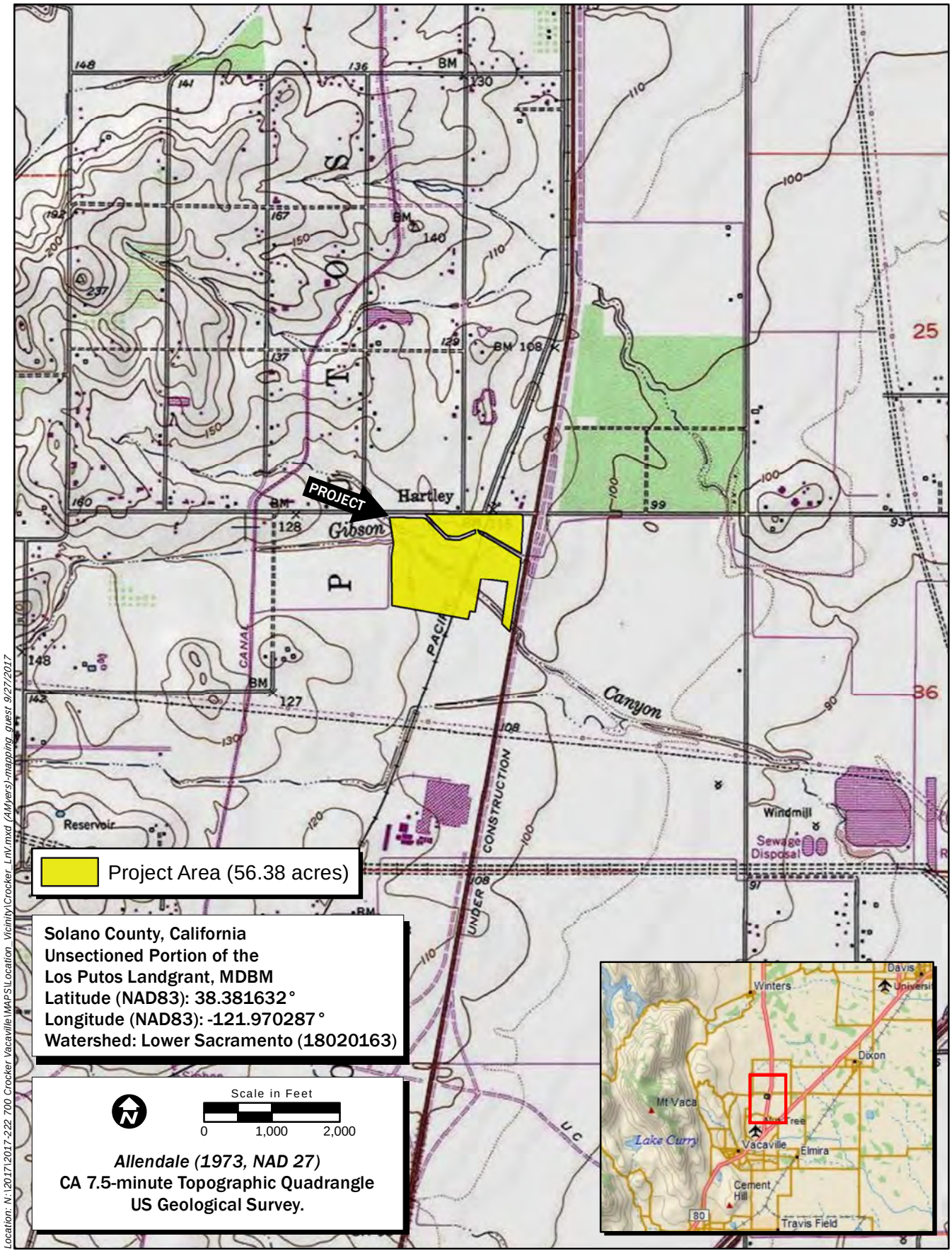
1.2 Area of Potential Effects

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of the project and includes the area within which significant impacts or adverse effects to Historical Resources or Historic Properties could occur as a result of the project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to the California Environmental Quality Act (CEQA), the term Project Area is used rather than APE. For the purpose of this document, the terms Project Area and APE are interchangeable.

The horizontal APE consists of all areas where activities associated with the Project are proposed and in the case of the current project, equals the project area subject to environmental review under the Section 106 and CEQA. This includes areas proposed for construction of the 700,000-square-foot industrial building described in the official Project description. The horizontal APE is illustrated in Figure 1 and also represents the survey coverage area. It measures approximately 56 acres in size.

The vertical APE is described as the maximum depth below the surface to which excavations for project foundations and facilities will extend. Therefore, the vertical APE includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the project, ground disturbance of up to 15 feet below the surface will be necessary in order to install industrial building utilities.

The vertical APE also is described as the maximum height of structures that could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. For the current project, the above-surface vertical APE is up to 50 feet above the surface, which is the maximum height of the proposed building.



Location: N:\2017\2017-222 700 Crocker Vacaville\MAPS\Location_Vicinity\Crocker_LnV.mxd (AMyers)-mapping_guest 9/27/2017

Map Date: 9/27/2017

iService Layer Credits: Copyright:© 2014 DeLorme
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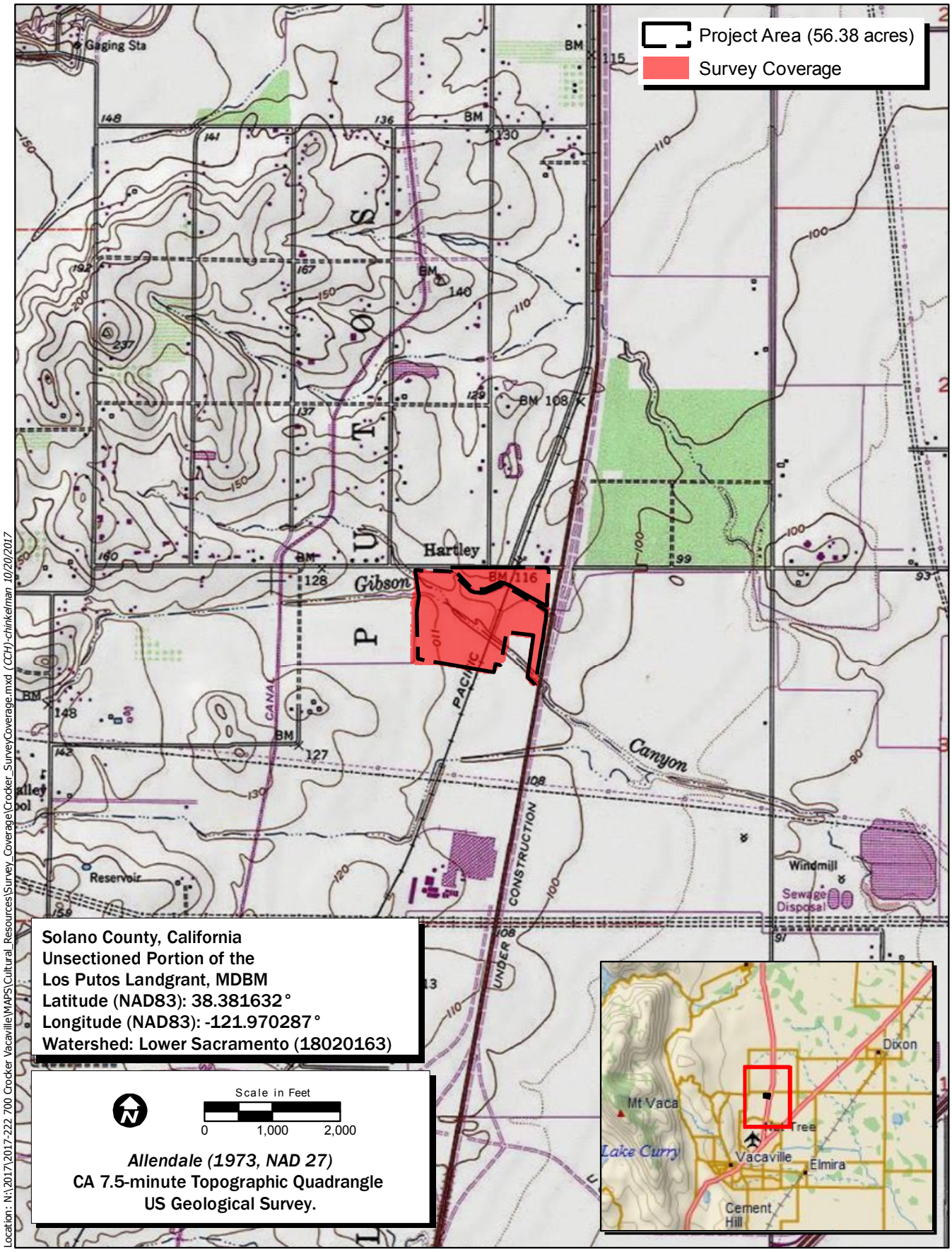
Figure 1. Project Location and Vicinity

2017-222 700 Crocker Vacaville



Location: N:\2017\2017-222 700 Crocker Vacaville\MAPS\Cultural_Resources\Survey_Coverage\Crocker_SurveyCoverage.mxd (CCH)-chinkelman 10/20/2017

Map Date: 10/20/2017
Service Layer Credits: Copyright:© 2015 DeLorme
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DRAFT

Figure 2. Survey Coverage

2017-222 700 Crocker Vacaville

1.3 Regulatory Context

To meet the regulatory requirements of this project, this cultural resources investigation was conducted pursuant to the provisions for the treatment of cultural resources contained within Section 106 of the National Historic Preservation Act (NHPA) and in CEQA (Public Resources Code § 21000 et seq.) The goal of NHPA and CEQA is to develop and maintain a high-quality environment that serves to identify the significant environmental effects of the actions of a proposed project and to either avoid or mitigate those significant effects where feasible. CEQA pertains to all proposed projects that require state or local government agency approval, including the enactment of zoning ordinances, the issuance of conditional use permits, and the approval of development project maps. The NHPA pertains to projects that entail some degree of federal funding or permit approval.

The NHPA and CEQA (Title 14, California Code of Regulations [CCR], Article 5, § 15064.5) apply to cultural resources of the historical and prehistoric periods. Any project with an effect that may cause a substantial adverse change in the significance of a cultural resource, either directly or indirectly, is a project that may have a significant effect on the environment. As a result, such a project would require avoidance or mitigation of impacts to those affected resources. Significant cultural resources must meet at least one of four criteria that define eligibility for listing on either the California Register of Historical Resources (CRHR) (Public Resources Code § 5024.1, Title 14 CCR, § 4852) or the National Register of Historic Places (NRHP) (36 CFR 60.4). Cultural resources eligible for listing on the NRHP are considered Historic Properties under 36 Code of Federal Regulations Part 800 and are automatically eligible for the CRHR. Resources listed on or eligible for inclusion in the CRHR are considered Historical Resources under CEQA.

In anticipation of the possibility that the Project may affect Waters of the United States (U.S.), thereby requiring the project proponent to meet the requirements of Section 404 of the Clean Water Act and obtain a permit from the U.S. Army Corps of Engineers' (USACE) Sacramento District Regulatory Division, this report is also in compliance with the 2014 *Sacramento District Regulatory Branch Guidelines for Compliance with Section 106 of the National Historic Preservation Act of 1966, as amended*. Moreover, because this project qualifies as a federal undertaking, regulations (36 CFR 800) implementing Section 106 of the NHPA require that cultural resources be identified and then evaluated using NRHP eligibility criteria.

1.4 Report Organization

The following report documents the study and its findings and was prepared in conformance with the California Office of Historic Preservation's (OHP) *Archaeological Resource Management Reports: Recommended Contents and Format.* Attachment A includes a confirmation of the records search with the California Historical Resources Information System (CHRIS) and historical society coordination. Attachment B contains documentation of a search of the Sacred Lands File. Attachment C presents photographs of the Project Area, and Attachment D contains confidential cultural resource site locations and site records.

Sections 6253, 6254, and 6254.10 of the California Code authorize state agencies to exclude archaeological site information from public disclosure under the Public Records Act. In addition, the California Public Records Act (Government Code § 6250 et seq.) and California's open meeting laws (The

Brown Act, Government Code § 54950 et seq.) protect the confidentiality of Native American cultural place information. Under Exemption 3 of the federal Freedom of Information Act (5 U.S. Code 5 [USC]), because the disclosure of cultural resources location information is prohibited by the Archaeological Resources Protection Act of 1979 (16 USC 470hh) and Section 304 of the NHPA, it is also exempted from disclosure under the Freedom of Information Act. Likewise, the Information Centers of the CHRIS maintained by the OHP prohibit public dissemination of records search information. In compliance with these requirements, the results of this cultural resource investigation were prepared as a confidential document, which is not intended for public distribution in either paper or electronic format. This redacted version can be used for public distribution.

2.0 SETTING

2.1 Environmental Setting

The Project Area is located in northern Solano County. The Project Area is relatively flat and elevations range from 110 to 120 feet above mean sea level, and consist of a vacant industrial parcel with roadways at the northern and eastern Project boundaries, and a canal within the northern cut-out of the Project Area. Gibson Canyon Creek runs through the Project Area; however, the original waterway has been rerouted to the north, just south of the canal, and no longer follows its original channel. An existing industrial building is located directly south of the Project Area, which is surrounded by rural residential development to the north, Interstate 505 to the east, undeveloped parcels to the west, and developed industrial parcels to the south. Putah South Canal is located 0.4 mile west of the Project Area.

2.2 Geology and Soils

According to the U.S. Department of Agriculture's (USDA) Web Soil Survey website (USDA 2016), four soil types are located within the Project Area: Capay silty clay loam (CA); Corning gravelly loam (CvD2), 2 to 15 percent slopes, eroded; San Ysidro sandy loam (SeA), 0 to 2 percent slopes; and San Ysidro (SfA), thick surface, 0 to 2 percent slopes.

Due to the presence of alluvium along Gibson Canyon Creek, and given the likelihood of prehistoric archaeological sites located along perennial waterways, there exists the potential for buried prehistoric archaeological sites in the Project Area. As a result, a cultural resources inventory that included an archaeological survey of the APE was required.

2.3 Vegetation and Wildlife

The dominant plant community within the Project Area includes non-native annual grassland species such as ripgut brome (*Bromus diandrus*), wild oats (*Avena fatua*), soft brome (*B. hordeaceus*), barley (*Hordeum murinum*), Italian ryegrass (*Lolium multiflorum*), filaree (Erodium *botrys*), vetch (*Vicia species*), bull thistle (*Cirsium vulgare*), and prickly lettuce (*Lactuca serriola*).

The riparian woodland vegetation community is associated with Gibson Canyon Creek and is comprised of Fremont cottonwood (*Populus fremontii*), Valley oak, interior live oak, California buckeye (*Aesculus californica*), and willow (*Salix* sp.), among other woody species. The shrub-understory layer is comprised of

species such as coyote bush and willows. Gibson Canyon Creek is largely intermittent, but may be influenced during the dry season by runoff from upstream development.

Wildlife species that may be found within the Project Area include: western bluebird (*Sialia mexicana*), oak titmouse (*Baeolophus inornatus*), red-shouldered hawk (*Buteo lineatus*), American crow (*Corvus brachyrhynchos*), California vole (*Microtus californicus*), deer mouse (*Peromyscus maculatus*), raccoon (*Procyon lotor*), black-tailed deer (*Odocoileus hemionus*), Pacific tree frog (*Pseudacris regilla*), gopher snake (*Pituophis catenifer*), and western rattlesnake (*Crotalus viridis*).

3.0 CULTURAL CONTEXT

3.1 Regional Prehistory

It is generally believed that human occupation of California began at least 10,000 years before present (BP). The archaeological record indicates that between approximately 10,000 and 8000 BP, a predominantly hunting economy existed, characterized by archaeological sites containing numerous projectile points and butchered large animal bones. Animals that were hunted probably consisted mostly of large species still alive today. Bones of extinct species have been found, but cannot definitely be associated with human artifacts. Although small animal bones and plant grinding tools are rarely found within archaeological sites of this period, small game and floral foods were probably exploited on a limited basis. A lack of deep cultural deposits from this period suggests that groups included only small numbers of individuals who did not often stay in one place for extended periods (Wallace 1978).

Around 8,000 BP, there was a shift in focus from hunting towards a greater reliance on plant resources. Archaeological evidence of this trend consists of a much greater number of milling tools (e.g., metates and manos) for processing seeds and other vegetable matter. This period, which extended until around 5000 years BP, is sometimes referred to as the Millingstone Horizon (Wallace 1978). Projectile points are found in archaeological sites from this period, but they are far fewer in number than from sites dating to before 8000 BP. An increase in the size of groups and the stability of settlements is indicated by deep, extensive middens at some sites from this period (Wallace 1978).

In sites dating to after about 5,000 BP, archaeological evidence indicates that reliance on both plant gathering and hunting continued as in the previous period, with more specialized adaptation to particular environments. Mortars and pestles were added to metates and manos for grinding seeds and other vegetable material. Flaked-stone tools became more refined and specialized, and bone tools were more common. During this period, new peoples from the Great Basin began entering southern California. These immigrants, who spoke a language of the Uto-Aztecan linguistic stock, seem to have displaced or absorbed the earlier population of Hokan-speaking peoples. During this period, known as the Late Horizon, population densities were higher than before and settlement became concentrated in villages and communities along the coast and interior valleys (Erlandson 1994; McCawley 1996). Regional subcultures also started to develop, each with its own geographical territory and language or dialect (Kroeber 1925; McCawley 1996; Moratto 1984). These were most likely the basis for the groups encountered by the first Europeans during the eighteenth century (Wallace 1978). Despite the regional differences, many material culture traits were shared among groups, indicating a great deal of interaction

(Erlandson 1994). The introduction of the bow and arrow into the region sometime around 2000 BP is indicated by the presence of small projectile points (Wallace 1978; Moratto 1984).

3.2 Local Prehistory

This section provides a regional overview with contextual elements drawn from California's Central Valley Region, the Western Foothills Region, and from the transition zone itself where the Project lies. There has been more extensive research and study of Central Valley prehistory than the prehistory of the Sierra Nevada foothill zone, but a fair amount of cultural overlap exists within these regions. This section includes the most recent and readily available research of both regions (Rosenthal et al. 2007), and includes some reference to the climactic changes that swept the Sierra Nevada being a catalyst for population movement that led to cultural change in the foothills.

California's Great Central Valley has long held the attention of archaeologists, and was a focus of early research in California. Archaeological work during the 1920s and 1930s led to the cultural chronology for central California presented by Lillard, Heizer, and Fenenga in 1939. This chronology was based on the results of excavations conducted in the lower Sacramento River Valley. This chronology identified three archaeological cultures, named Early, Transitional, and Late (Lillard et al. 1939).

Heizer (1949) redefined the description of these three cultures. He subsumed the three cultural groups into three time periods, designated the Early, Middle, and Late horizons. He primarily focused his research and reexamination of Lillard et al. (1939) on the Early Horizon, which he named Windmiller. He also intimated that new research and a reanalysis of existing data would be initiated for cultures associated with the Middle and Late Horizons; however, he did not complete this work and other research filled in the gaps.

Following years of documenting artifact similarities among sites in the San Francisco Bay region and the Delta, Beardsley (1948, 1954) formatted his findings into a cultural model known as the Central California Taxonomic System (CCTS). This system proposed a linear, uniform sequence of cultural succession in Central California, and explicitly defined Early, Middle, and Late horizons for cultural change. Archaeological researchers have subsequently refined and redefined aspects of the CCTS. For instance, Fredrickson (1973, 1974, and 1994) reviewed general economic, technological, and mortuary traits between archaeological assemblages across the region. He separated cultural, temporal, and spatial units from each other and assigned them to six chronological periods: Paleo-Indian (12,000-8000 BP); Lower, Middle, and Upper Archaic (8000 BP to AD 500) and Upper and Lower Emergent (AD 500 to 1800).

Fredrickson further defined three cultural patterns: The Windmiller (named after Heizer 1949 and Lillard et al. 1939), the Berkeley, and the Augustine patterns, and assigned them to the Early, Middle, and Late horizons of the CCTS. These patterns were defined to reflect the general sharing of lifeways within groups in a specific geographic region. The Windmiller pattern of the Early Horizon included cultural patterns dating from 5000 to 3000 BP; the Berkeley Pattern of the Middle Horizon (also known as the Cosumnes cultural pattern after Ragir 1972), included cultural patterns dating from 3000 BP to AD 500, and the Augustine Pattern of the Late Horizon included the cultural patterns from AD 500 to the historic period.

Fredrickson's (1974) Paleo-Archaic-Emergent cultural sequence was redefined by Rosenthal et al. (2007). Rosenthal et al.'s recalibrated sequence is divided into three broad periods: The Paleoindian Period (11,550 to 8550 cal. BC); the three-staged Archaic period, consisting of the Lower Archaic (8550 to 5550 cal. BC), Middle Archaic (5550 to 550 cal. BC), and Upper Archaic (550 cal. BC to cal. AD 1100); and the Emergent Period (cal. AD 1100 to Historic) (Rosenthal et al. 2007). The three divisions of the Archaic Period correspond to climate changes. This is the most recently developed sequence and is now commonly used to interpret Central California prehistory. The aforementioned periods are characterized by the following:

3.2.1 Paleoindian Period

This period began when the first people began to inhabit what is now known as the California culture area. It was commonly believed these first people subsided on big game and minimally processed foods, (i.e., hunters and gatherers), presumably with no trade networks. More recent research indicates these people may have been more sedentary, relied on some processed foods, and traded (Rosenthal et al. 2007). Populations likely consisted of small groups traveling frequently to exploit plant and animal resources.

3.2.2 Archaic Period

This period was characterized by an increase in plant exploitation for subsistence, more elaborate burial accoutrements, and increase in trade network complexity (Bennyhoff and Fredrickson 1994). The three divisions that correspond to prehistoric climate change are characterized by the following aspects (Rosenthal et al. 2007):

- *Lower Archaic Period* — this period is characterized by cycles of widespread floodplain and alluvial fan deposition. Artifact assemblages from this period include chipped stone crescents and early wide-stemmed points, marine shell beads, eastern Nevada obsidian, and obsidian from the north Coast Ranges. These types of artifacts found on sites dating to this period indicate trade was occurring in multiple directions. A variety of plant and animal species were also utilized, including acorns, wild cucumber, and manzanita berries.
- *Middle Archaic Period* — this period is characterized by a drier climate period. Rosenthal et al. (2007:153) identified two distinct settlement/subsistence patterns in this period: the Foothill Tradition and the Valley Tradition. Functional artifact assemblages consisting primarily of locally sourced flaked stone and groundstone cobbles characterize the foothills tradition, while the Valley Tradition was generally characterized by diverse subsistence practices and extended periods of sedentism.
- *Upper Archaic Period* — this period is characterized by abrupt change to wetter and cooler environmental climate conditions. Much greater cultural diversity is evident from this period. More specialized artifacts, such as bone tools, ceremonial blades, polished and groundstone plummets, saucer and saddle *Olivella* shell beads, *Haliotis* shell ornaments, and a variety of groundstone implements are characteristic of this period.

3.2.3 Emergent Period

The following discussion summarizes the cultural patterns and the different local developments that are represented in archaeological deposits in the region surrounding the current Project Area.

This period is most notably marked by the introduction of the bow and arrow, the emergence of social stratification linked to wealth, and more expansive trade networks signified by the presence of clam disk beads that were used as currency (Moratto 1984). The Augustine pattern (the distinct cultural pattern of the Emergent Period) is characterized by the appearance of small projectile points (largely obsidian), rimmed display mortars, flanged steatite pipes, flanged pestles, and chevron-designed bird-bone tubes. Large mammals and small seeded resources appear to have made up a larger part of the diet during this period (Fredrickson 1968; Meyer and Rosenthal 1997).

The Windmiller Pattern of the Early Horizon (as defined by Beardsley 1948), dates to the Middle Archaic (as defined by Rosenthal et al. 2007) and may be the most extensively studied of all the cultural patterns defined for the Central Valley. In fact, the similarity noted between elements of Windmiller and materials from other sites may have been the catalyst for early archaeologists identifying the material cultural "blending" of groups in the Central Valley during this period. The temporal span for Windmiller has been updated and reanalyzed several times in the archaeological literature (Fredrickson 1973, 1974; Heizer 1949; Moratto 1984; Ragir 1972). The date originally proposed for the emergence of Windmiller was 4500 BP (Lillard et al. 1939; Ragir 1972), because the culture at 4000 years ago appeared to have been fully developed and seemed to have been well integrated into the regional economic system.

Characteristics to identify the Windmiller pattern have been presented by multiple authors over time (Fredrickson 1973, 1974; Heizer 1949; Moratto 1984; Ragir 1972). Most notable characteristics are:

- large, heavy stemmed and leaf-shaped projectile points commonly made of a variety of materials other than obsidian;
- perforate charmstones;
- Haliotis and Olivella shell beads and ornaments;
- trident fish spears;
- baked clay balls (presumably for cooking in baskets);
- flat slab milling stones;
- small numbers of mortars; and
- ventrally extended burials oriented toward the west.

The subsistence pattern of Windmiller groups probably emphasized hunting and fishing, with supplemental seed collecting (possibly including acorns) (Heizer 1949; Moratto 1984; Ragir 1972).

Windmiller groups acquired obsidian from at least two Coast ranges and three trans-Sierran sources, Haliotis and Olivella shells and ornaments from the coast, and quartz crystals from the Sierra Nevada foothills (Heizer 1949; Ragir 1972). It is widely hypothesized that the bulk of these materials were acquired

through trade, however some may have been acquired as part of seasonal movements between the Central Valley and the Sierra Nevada foothills.

There is evidence for seasonal transhumance in the distribution of Windmiller artifacts, sites, and burial patterns. Johnson's work (1967; 1970) along the edge of the Sierra Nevada foothills [redacted], suggests a link between Windmiller groups of the Central Valley and the Sierra Nevada mortuary caves. Johnson (1970:119) suggested that his data reveals a pattern of gradual change from the Early through the Middle Horizon (as defined by Beardsley 1948), rather than a displacement of local groups by foreign populations as theorized by Baumhoff and Olmstead (1963) based on ethnolinguistic evidence. Rondeau (1980), also working at the edge of the Central Valley at [redacted], the Bartleson Mound, identified components of the Early Horizon (as defined by Beardsley 1948). He (1980:58) even postulated a potential relationship between the Early Horizon cultures and the Martis Complex (a basalt preferring culture in the Martis Valley of the Sierra Nevada). In addition, analysis of Windmiller burial orientation (Schulz 1970) and skeletal analyses (e.g., Harris Lines) by McHenry (1968) suggest a high percentage of winter death among Windmiller groups. Incorporating all of this data, Moratto (1984:206) postulated that Windmiller groups were exploiting the foothills of the Sierra Nevada during the summer and returning in the winter to villages in the Central Valley as early as 4000 BP.

[redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

Further classification of the Middle Archaic (as defined by Rosenthal et al. 2007) into the Foothill Tradition and Valley Tradition helped to clarify the different types of cultural sequences which occurred during

these time periods. Functional artifact assemblages consisting primarily of locally sourced flaked stone and groundstone cobbles characterize the Foothills Tradition, with very few trade goods. Sites that represent the Valley Tradition are much fewer in number, and are generally characterized by much more diverse subsistence practices and extended periods of sedentism. Specialized tools, trade goods, and faunal refuse that indicate year-round occupation are evident on sites of the Valley Tradition (Rosenthal et al. 2007). Distinct artifacts attributed to this tradition include one of the oldest dated shell bead lots in central California (4160 BP) and a particular type of pestle used with a wooden mortar (Meyer and Rosenthal 1997).

The Sierra Nevada experienced significant climactic shifts and concomitant vegetation change throughout the Holocene, but pollen analysis and climactic records indicate that the current climate pattern and primary constituents of vegetation communities were in place by the Middle Archaic around 1000 BC (Hull 2007). Seasonal transhumance practiced by indigenous populations of the Sierra may have become more consistent during this period of relative environmental stasis.

[redacted]

The next era in the region is identified as the Late Horizon by Beardsley (1948, 1954), the Hotchkiss Culture by Ragir (1972), and the Augustine Pattern by Fredrickson (1974). The culture was formed by populations during the later Upper Archaic and Emergent Periods, as defined by Rosenthal et al. (2007), and ranges in age from around 550 cal. BC to contact (dates vary between the different models of prehistory developed for the region). The Upper Archaic, as discussed above, corresponds with the late Holocene change in environmental conditions to a wetter and cooler climate. The Emergent Period and Late Horizon are markedly represented by the introduction of bow and arrow technology, as well as more pronounced cultural diversity as reflected in diversity of burial posturing, artifact styles, and material culture. [redacted]

This era primarily represents both local innovation and the blending of new cultural traits introduced into the Central Valley. The Emergent Occupation (as defined by Rosenthal et al. 2007) coincides with the Augustine Pattern (Fredrickson 1974) in the lower Sacramento Valley/Delta region, and with the Sweetwater and Shasta complexes in the northern Sacramento Valley (Fredrickson 1974; Kowta 1988; Sundahl 1982). The emergence of the Augustine Pattern appears to have been associated with the expansion of Wintun populations from the north, which appears to have led to an increase in settlements in the area after 550 BP (Bennyhoff 1994; Moratto 1984).

During this period in the Sierra Nevada, paleoenvironmental data suggests severe droughts occurred from around AD 892 to 1112 and AD 1210 to 1350 (Hull 2007; Lindström 1990; Stine 1994). These drier conditions surely affected the seasonal resource procurement rounds of the native populations during this time, and likely led to an influx of population movement and cultural blending into the foothills zone and Central Valley by Sierra Nevada groups.

Despite the varying designations, this emergent era is distinguished in the archaeological record by intensive fishing, extensive use of acorns, elaborate ceremonialism, social stratification, and cremation of the dead. Artifacts associated with the defined patterns (Augustine, Emergent, Hotchkiss) include bow-and-arrow technology (evidenced by small projectile points), mortars and pestles, and fish harpoons with unilaterally or bilaterally placed barbs in opposed or staggered positions (Bennyhoff 1950). Mortuary patterns include flexed burials and cremations, with elaborate material goods found in association with prestigious individuals. [redacted]

3.3 Ethnography

Prior to the arrival of Euro-Americans in the region, indigenous groups speaking more than 100 different languages and occupying a variety of ecological settings inhabited California. Kroeber (1925, 1936), and others (i.e., Murdock 1960; Driver 1961), recognized the uniqueness of California's indigenous groups and classified them as belonging to the California culture area. Kroeber (1925) further subdivided California into four subculture areas: Northwestern, Northeastern, Southern, and Central.

When the first European explorers entered the regions between 1772 and 1821, an estimated 100,000 people, about one-third of the state's native population, lived in the Central Valley (Moratto 1984:171). At least seven distinct languages of Penutian stock were spoken among these populations: Wintu, Nomlaki, Konkow, River Patwin, Nisenan, Miwok, and Yokuts. Common linguistic roots and similar cultural and technological characteristics indicate that these groups shared a long history of interaction (Rosenthal et al. 2007).

Ethnographically, the Project Area is in the central portion of the territory occupied by the Penutian-speaking Hill Patwin. The Patwin territory included both the River Patwin and Hill Patwin and extended from the southern portion of the Sacramento River Valley to the west of the river, from the town of Princeton south to San Pablo and Suisun bays. As a language, Patwin (meaning "people") is part of the Wintu linguistic family which has three main groups: Southern or Patwin; Central, of Glenn and Tehama counties; and the Northern, of the upper Sacramento, lower Pit, and the upper Trinity drainages (Johnson 1978). The Hill Patwin territory includes the lower hills of the eastern Coast Range mountain slope (Long, Indian, Bear, Capay, Cortina, and Napa Valley). Between there and the foothills, the grassy plains were largely unsettled, used mainly as a foraging ground by both valley and hill groups (Johnson 1978). Patwin pre-contact population numbers are not precise, but Kroeber (1932) estimates 12,500 for the Wintu, Nomlaki, and Patwin groups. These numbers reflect groups prior to the 1833 malaria epidemic.

Individual and extended families "owned" hunting and gathering grounds, and trespassing was discouraged without permission. Residence and marriage was generally matrilocal, but unrestricted. Politically, the Patwin were divided into "tribelets," made up of a primary village and a series of outlying hamlets, presided over by a more-or-less hereditary chief. Villages typically included family dwellings, acorn granaries, a sweathouse, and a dance house, owned by the chief. The chief had unrestricted power and presided over economic and ceremonial decisions (Johnson 1978).

Subsistence activities centered around fishing and hunting of deer, Tule elk, antelope, bear, ducks, geese, quail, turtles, fish, and other small animals. Hunting of deer often took the form of communal drives, with the actual killing of the deer performed by individuals or groups. Decoys were used for attracting such game as deer and ducks. Nets and holding pens were used for fishing, which was also an important part of normal subsistence activities. Types of fish included sturgeon, salmon, perch, chub, sucker, hardhead, pike, trout, steelhead and mussels. Although acorns were the staple of the Patwin diet, they also harvested sunflower, alfilaria, clover, bunchgrass, wild oak, and yellow flower, which was parched or dried, then pounded into a meal. Buckeye, Pine nuts, Juniper berries, Manzanita berries, Blackberries, wild grapes, Brodiaea bulbs, and Tule roots were also collected. Each village had its own locations for these food sources, and the village chief was in charge of assigning particular families to each collecting area. Game was prepared by roasting, baking, or drying of the meat. Tobacco was collected along the river and inhaled, but not cultivated. Salt was scraped off rocks (in the Cortina region) or by burning a grass found in the plains (Johnson 1978).

Patwin houses were built in the form of a dome, using tree branches as for the framing, then covered with thatch and earth. House floors were typically dug out and the walls were built up as a mound, with the entrance to the building made through the roof (Powers 1976). As described by Kroeber (1925) and Johnson (1978) the closest village location was Moso, located on the north bank of Cache Creek around the town of Capay. No positive cultural material has been located or observed to support this claim.

One of the most distinctive aspects of the Patwin culture was the cult system, found throughout northern central California. The main feature of the cult was the occurrence of one or more secret societies whose membership was by strict initiation, each with its own series of dances and rituals (Johnson 1978). Patwin culture is most distinctive in that it possessed three secret societies: the ghost, Hesi, and Kuksu. These involved elaborate ceremonial activities consisting of singing and dancing (Foster 1995). Membership included mostly males, beginning around the ages of eight to 16, but on limited occasions, included high status women (Johnson 1978). Everyday Patwin life centered on the rituals performed within the secret societies. Details involving the ceremonies varied, but most had sacred dances requiring careful preparation, costume and music. These dances could last several days. Detailed summaries are provided by Kroeber (1932) and Loeb (1933).

The earliest historical accounts of the Project Area begin with Spanish mission registers of baptisms, marriages, and deaths of Indians. By 1800, Native Americans were taken from the Patwin settlement of Aguastos in the south-central area, and from other villages, by emissaries of Mission Dolores. In addition, missions San Jose and Sonoma actively proselytized the southern Patwin. Between the 1830s and 1840s, both Mexicans and Americans rapidly overtook the Patwin territory under the authority of the Mexican government (Johnson 1978).

The Spanish arrived on the central California coast in 1769, and by 1776 had been explored by José Canizares. In 1808, Gabriel Moraga crossed into the territory, and in 1813 a major battle was fought between the Miwok and the Spaniards near the mouth of the Cosumnes River. In 1833, an epidemic most likely to be malaria, raged through the Sacramento Valley, killing an estimated 75 percent of the native population. The discovery of gold in 1848 at Sutter's Mill, near the Nisenan village of Colluma (now Coloma) on the South Fork of the American River, drew thousands of miners into the area, and led to widespread killing and the virtual destruction of traditional Native American cultures.

3.4 Regional History

The first European to visit California was Spanish maritime explorer Juan Rodriguez Cabrillo in 1542. Cabrillo was sent north by the Viceroy of New Spain (Mexico) to look for the Northwest Passage. Cabrillo visited San Diego Bay, Catalina Island, San Pedro Bay, and the northern Channel Islands. The English adventurer Francis Drake visited the Miwok Native American group at Drake's Bay or Bodega Bay in 1579. Sebastian Vizcaíno explored the coast as far north as Monterey in 1602. He reported that Monterey was an excellent location for a port (Castillo 1978).

Colonization of California began with the Spanish Portolá land expedition. The expedition, led by Captain Gaspar de Portolá of the Spanish army and Father Junipero Serra, a Franciscan missionary, explored the California coast from San Diego to the Monterey Bay Area in 1769. As a result of this expedition, Spanish missions to convert the native population, presidios (forts), and pueblos (towns) were established. The Franciscan missionary friars established 21 missions in Alta California (the area north of Baja California) beginning with Mission San Diego in 1769 and ending with the mission in Sonoma established in 1823. The purpose of the missions and presidios was to establish Spanish economic, military, political, and religious control over the Alta California territory. The nearest missions were in the vicinity of San Francisco Bay and included Mission San Francisco de Asis (Dolores) established in 1776 on the San Francisco peninsula, Mission Santa Clara de Asis at the south end of San Francisco Bay in 1777, Mission San Jose in 1797, Mission San Rafael, established as an *asistencia* in 1817 and a full mission in 1823, and Mission San Francisco Solano in Sonoma in 1823 (Castillo 1978; California Spanish Missions 2011). Presidios were established at San Francisco and Monterey. The Spanish took little interest in the area and did not establish any missions or settlements in the Central Valley.

After Mexico became independent from Spain in 1821, what is now California became the Mexican province of Alta California with its capital at Monterey. In 1827, American trapper Jedediah Smith traveled along the Sacramento River and into the San Joaquin Valley to meet other trappers of his company who were camped there, but no permanent settlements were established by the fur trappers (Thompson and West 1880).

The Mexican government closed the missions in the 1830s and former mission lands, as well as previously unoccupied areas, were granted to retired soldiers and other Mexican citizens for use as cattle ranches. Much of the land along the coast and in the interior valleys became part of Mexican land grants or "ranchos" (Robinson 1948). During the Mexican period there were small towns at San Francisco (then known as Yerba Buena) and Monterey. The rancho owners lived in one of the towns or in an adobe house on the rancho. The Mexican Period includes the years 1821 to 1848.

John Sutter, a European immigrant, built a fort at the confluence of the Sacramento and American rivers in 1839 and petitioned the Mexican governor of Alta California for a land grant, which he received in 1841. Sutter built a flour mill and grew wheat near the fort (Bidwell 1971). Gold was discovered in the flume of Sutter's lumber mill at Coloma on the South Fork of the American River in January 1848 (Marshall 1971). The discovery of gold initiated the 1849 California Gold Rush, which brought thousands of miners and settlers to the Sierra foothills east and southeast of Sacramento.

The American period began when the Treaty of Guadalupe Hidalgo was signed between Mexico and the United States in 1848. As a result of the treaty, Alta California became part of the United States as the territory of California. Rapid population increase occasioned by the Gold Rush of 1849 allowed California to become a state in 1850. Most Mexican land grants were confirmed to the grantees by U.S. courts, but usually with more restricted boundaries, which were surveyed by the U.S. Surveyor General's office. Land outside the land grants became federal public land which was surveyed into sections, quarter-sections, and quarter-quarter sections. The federal public land could be purchased at a low fixed price per acre or could be obtained through homesteading (after 1862) (Robinson 1948).

3.5 Project Area History

The Project Area is located just east of the Los Putos land grant (originally called Lihuaytos), which includes what is now Vacaville. The Lihuaytos land grant was issued by the Mexican governor of Alta California in 1843 to Juan Manuel Vaca and Juan Felipe Peña (Aviña 1976:98). Vaca and Peña came from New Mexico and settled along Putah Creek, north of what is now Vacaville and the Project Area. Their Lihuaytos land grant overlapped with the Rio de los Putos land grant along Putah Creek given to Francisco Guerrero y Palomares of Tepic, Mexico, in 1842. The Rio de los Putos land grant was purchased by William Wolfskill of Los Angeles the same year. Wolfskill's land grant had oak trees along Putah Creek while the Vaca and Peña grant was described as a "barren waste." Vaca and Peña grazed their cattle along Putah Creek and eventually took over use of the Rio de los Putos land grant forcing out the cattle of John Wolfskill, William Wolfskill's brother. The Wolfskills filed a suit to recover their land with the Mexican governor who ruled in favor of the Wolfskills (Bowen 2000a).

Vaca and Peña received a new grant in 1845, called Los Putos, from the Mexican governor, which roughly overlapped with the previous Lihuaytos grant. However, this grant was shifted slightly south so as not to overlap with the Rio de Los Putos grant. Instead, it overlapped the Tolenas grant to the southwest owned by Jose Francisco Armijo. Since there was no water on the Los Putos grant, Vaca and Peña began watering their cattle at Ulatis Creek on the Tolenas grant (Bowen 2000a). In 1850, Vaca sold nine square miles of the Los Putos grant to William McDaniel with the stipulation that one square mile (or one square English league in some documents) should be used for the village of Vacaville. Vaca later contended that he had only sold the one square mile or league for Vacaville to McDaniel (Bowen 2000b). The U.S. government issued a patent (federal deed) for the Los Putos land grant to Vaca and Peña in 1858 (Bureau of Land Management [BLM] 2017). The land grant confirmed by the U.S. government had better-defined and more restricted boundaries compared to the Mexican grant.

Lansing Mizner, McDaniel's business partner and a surveyor, laid out the town of Vacaville and surveyed it into lots. He filed the plat of the town with the County on December 13, 1851 (Bowen 2000b). Vaca

received 105 blocks of 10 lots each and Peña received about 10 blocks. People wishing to settle in Vacaville could have purchased lots from McDaniel, Vaca, or Peña. The town plat showed two plazas, a block for schools, a block reserved for a church, and a block for a cemetery (Bowen 2000c).

Four years after the town was established, the Ulatis Academy opened in Vacaville in 1855. Vacaville was connected by a spur to the California Pacific/Southern Pacific Railroad main line from the Bay Area to Sacramento at Elmira in 1869 (Robertson 1998). The California College was begun at Vacaville in 1871. A telephone line was established in Vacaville in 1884 and a temperance union was formed in 1886.

While agriculture in the surrounding area had previously focused on wheat cultivation, by the 1880s Solano County's farmers had turned to fruit growing. Local conditions were favorable for this enterprise, as the area had an ample water supply, an earlier and more extensive growing season than other regions, and an inexpensive labor force made up of Chinese immigrants. The Vacaville fruit district became quite successful, producing peaches, apricots, table grapes, and cherries (Limbaugh and Payne 1978; Wickson 1888). Fires destroyed most of downtown Vacaville and the Chinese district in 1887, but in that same year a large fruit drying enterprise began and Vacaville soon became the center of a major fruit and nut production area. Dried fruit from Vacaville was shipped as far away as England by 1903 (Martin 2007).

Only five years after fire destroyed much of the downtown area, an earthquake destroyed it again in 1892. That same year Vacaville received electricity and voted for incorporation; just three years later, another fire destroyed businesses and Chinese dwellings in Vacaville in 1895 (Martin 2007).

A spur to Vacaville from Suisun on the Sacramento Northern electric interurban railroad line from Oakland to Sacramento was completed in 1914 (Robertson 1998). Main Street was paved and a Carnegie Library opened in Vacaville in 1915.

Railroads

The western terminus of the first transcontinental railroad, the Central Pacific Railroad, was in Sacramento. The line from Sacramento to Promontory Point, Utah, where it connected with the Union Pacific Railroad, was completed in 1869. Sacramento was connected to Oakland in 1869 by the construction of the Western Pacific Railroad. The Central Pacific and the Western Pacific had the same ownership. The Western Pacific name was soon dropped and the entire route from Oakland to Salt Lake City via Sacramento became known as the Central Pacific Railroad (Robertson 1998).

The Central Pacific Railroad was leased to the Southern Pacific Railroad (also under the same ownership) in 1885. After 1889, the Central Pacific name was no longer used and the entire railway was known as the Southern Pacific Railway Company. In 1996, the Union Pacific Railway acquired the Southern Pacific Railway (Robertson 1998).

The Northern Railway Company built a spur from Vaca Station (later Elmira) to Vacaville in 1869 which became known as the Vaca Valley Railroad. Vaca Station was on the California Pacific line from the Bay Area to Sacramento. The Northern Railway extended its line from Vacaville to Madison in 1877 and Rumsey in 1888 (Robertson 1998). The new alignment created several company towns along the route. No ballast rocks were laid on this route; the track was laid on hand-flattened, packed ground and the rails were attached to wooden ties laying on the bare ground (Crull 2014). Service from Elmira to Esparto

continued until 1957. The tracks were removed from Vacaville to Esparto, [redacted] in 1975 (Crull 2014). [redacted] The Northern Railway also built a line from Woodland to Tehama. The Northern Railway and the California Pacific Railroad were purchased by the Southern Pacific Railway in 1898 (Robertson 1998).

The California Pacific Railroad Company built the rail line from Vallejo to Sacramento. It was completed in 1868 from Vallejo to Davis under the management of ex-California governor Milton S. Latham. R. P. Hammond was the President when the company was incorporated (Robertson 1998). The California Pacific line passed through Davis, Dixon, Elmira, Fairfield, Cordelia, and Benicia to reach its western terminus in Vallejo, where it connected with steamers to San Francisco. The line was completed from Davis to Sacramento in 1870 (Robertson 1998). The California Pacific route from Sacramento to the Bay Area was faster and shorter than the Central Pacific's because it had no hills to climb and followed a more direct route. It had higher fares, but was preferred by passengers for transport. It also carried wheat farmed in Sacramento, Yuba, Yolo, and Solano counties to the Star Mill in Vallejo. The California Pacific was operated by the Central Pacific Railroad from 1876 to 1885. It was operated by the Southern Pacific Railroad from 1885 to 1898 and was purchased by the Southern Pacific Railroad in 1898. However, the line was operated under the original California Pacific name until 1898 (Jones and Stokes 2000). A one-room depot constructed for the line in 1868 eventually became the town of Elmira (Thompson and West 1880). It is currently owned by the Union Pacific Railway, which acquired the Southern Pacific Railway in 1996 (Robertson 1998).

4.0 METHODS

4.1 Personnel Qualifications

All phases of the cultural resources investigation were supervised by Registered Professional Archaeologist Lisa Westwood, who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historical archaeologist. Fieldwork was conducted by Associate Archaeologist Megan Webb. Dr. Roger Mason, RPA provided technical report review and quality assurance.

Lisa Westwood, the Principal Investigator, is a Registered Professional Archaeologist who meets the Secretary of the Interior's Professional Qualifications Standards for prehistoric and historical archaeologist with 24 years of experience. She holds a B.A. degree in Anthropology and an M.A. degree in Anthropology (Archaeology). She has participated in or supervised numerous survey, testing, and data recovery excavations, has recorded and mapped hundreds of prehistoric and historical sites, and has cataloged, identified, and curated hundreds of thousands of artifacts. She has conducted evaluations of cultural resources for eligibility to the NRHP and CRHR and is well versed in impact assessment and development of mitigation measures for CEQA and Section 106 (NHPA) projects.

Dr. Mason has been professionally involved with cultural resources management in California since 1983. Dr. Mason is the author of more than 200 reports dealing with cultural resource surveys, evaluations, and

mitigation programs in California. He has extensive project experience with the cultural resources requirements of CEQA and Section 106 of the NHPA.

Megan Webb is an Associate Archaeologist for ECORP and has more than two years of experience in cultural resources management, primarily in California. She holds a B.A. degree in Anthropology and has participated in all aspects of archaeological fieldwork, including survey, test excavation, and data recovery, in addition to months of archaeological lab experience.

4.2 Records Search Methods

A records search for the property was completed at the Northwest Information Center (NWIC) of the CHRIS at California State University-Sonoma on September 27, 2017 (NWIC search #17-0996; provided as Attachment A). The purpose of the records search was to determine the extent of previous surveys within a 0.5-mile (800-meter) radius of the proposed project location, and whether previously documented prehistoric or historic archaeological sites, architectural resources, or traditional cultural properties exist within this area.

In addition to the official records and maps for archaeological sites and surveys in Solano County, the following historic references were also reviewed: Historic Property Data File for Solano County (OHP 2012); The National Register Information System (National Park Service [NPS] 2016); Office of Historic Preservation, California Historical Landmarks (OHP 2016); California Historical Landmarks (OHP 1996 and updates); California Points of Historical Interest (OHP 1992 and updates); Directory of Properties in the Historical Resources Inventory (1999); Caltrans Local Bridge Survey (Caltrans 2017a); Caltrans State Bridge Survey (Caltrans 2017b); and *Historic Spots in California* (Kyle 2002).

Other references examined include a RealQuest Property Search and historic General Land Office (GLO) land patent records (Bureau of Land Management [BLM] 2016). Historic maps reviewed include:

- 1858 BLM Plat map for Township 7 North, Range 1 West
- 1908 USGS Vacaville, (1:62,500)
- 1917 USGS Wolfskill (Allendale), California (1:31,680)
- 1953 USGS Allendale, California (7.5-minute scale)
- 1953 photorevised 1973 USGS Allendale, California (7.5-minute scale)

Historic aerial photos taken in 1968 and 1993 to present were also reviewed for any indications of property usage and built environment.

The nearest local historic register is in Vacaville, which does not contain information for the Project Area.

4.3 Sacred Lands File Coordination Methods

In addition to the record search, ECORP contacted the California Native American Heritage Commission (NAHC) on September 28, 2017 to request a search of the Sacred Lands File for the APE. (Attachment B). This search will determine whether or not Sacred Lands have been recorded by California Native American

tribes within the APE, because the Sacred Lands File is populated by members of the Native American community who have knowledge about the locations of tribal resources. In requesting a search of the Sacred Lands File, ECORP solicited information from the Native American community regarding tribal cultural resources, but the responsibility to formally consult with the Native American community lies exclusively with the federal and local agencies under applicable state and federal law. ECORP was not delegated authority by the lead agencies to conduct tribal consultation.

4.4 Other Interested Party Consultation Methods

ECORP mailed letters to the Solano County Historical Society on October 2, 2017 to solicit comments or obtain historical information that the repository might have regarding events, people, or resources of historical significance in the area (Attachment A).

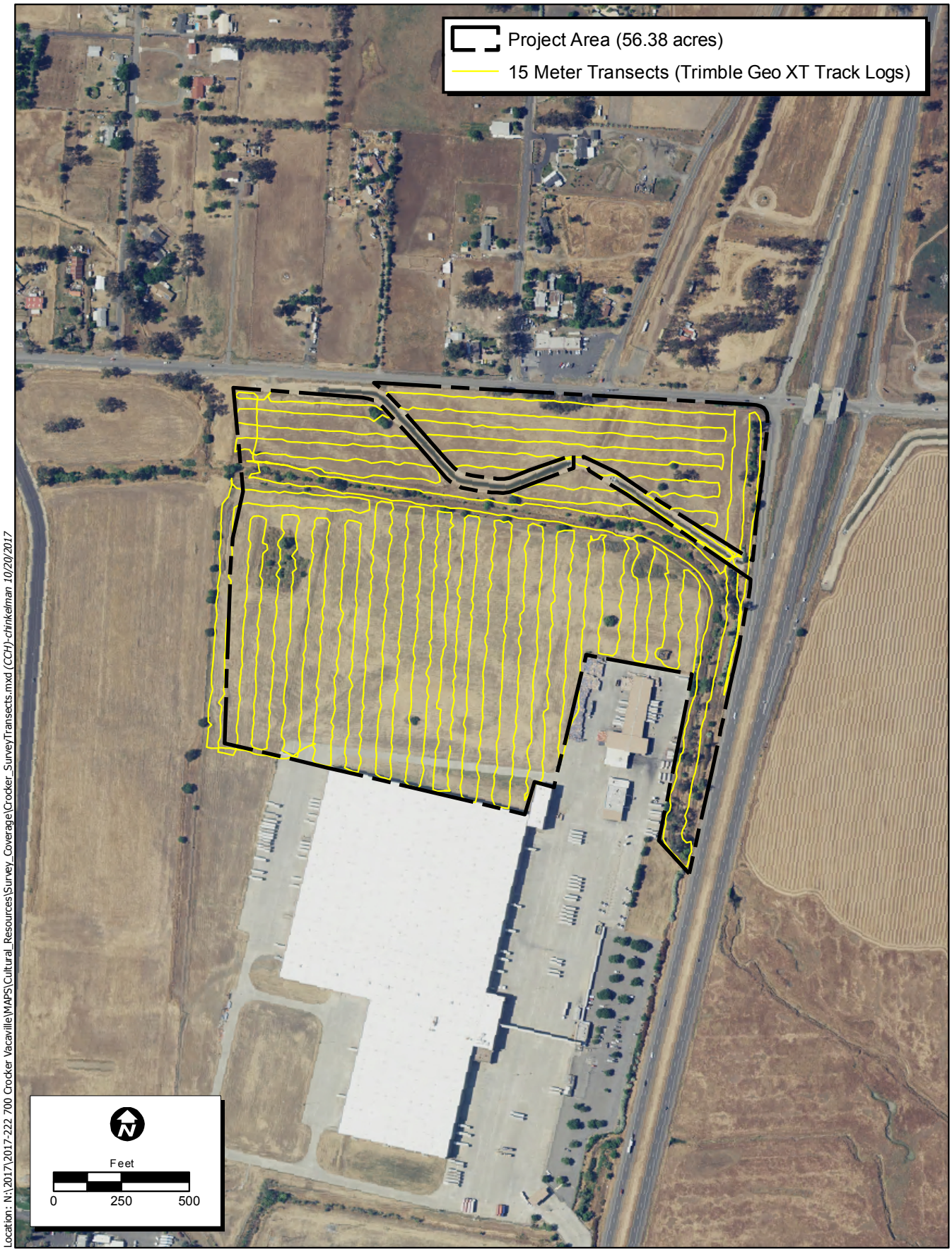
4.5 Archival Research Methods

In addition to the official records and maps for archaeological sites and surveys reviewed during the records search at the NWIC, ECORP conducted focused property- and site-specific archival research. Archival research was conducted online where primary sources such as historical newspaper articles, maps, and county recorders records were reviewed. These records were found at online repositories that include websites such as archive.org, the California Digital Newspaper Collection, U.S. census records from 1880 and beyond, the BLM GLO survey plats, and historical topographic maps. The focused archival research resulted in sufficient information about the historic period remains in order to prepare appropriate evaluations of the resources within the Project Area. The results of the archival research are incorporated as historical context in Section 5.0 of this report.

4.6 Field Methods

On October 5 and 6, 2017, ECORP subjected the APE to an intensive pedestrian survey under the guidance of the *Secretary of the Interior's Standards for the Identification of Historic Properties* (NPS 1983) using 15-meter transects (Figures 2 and 3). ECORP expended two person-days in the field. At that time, the ground surface was examined for indications of surface or subsurface cultural resources. The general morphological characteristics of the ground surface were inspected for indications of subsurface deposits that may be manifested on the surface, such as circular depressions or ditches. Whenever possible, the locations of subsurface exposures caused by such factors as rodent activity, water or soil erosion, or vegetation disturbances were examined for artifacts or for indications of buried deposits. No subsurface investigations or artifact collections were undertaken during the pedestrian survey.

All cultural resources encountered during the survey were recorded using Department of Parks and Recreation 523-series forms approved by the California OHP. The resources were photographed, mapped using a handheld Global Positioning System receiver, and sketched as necessary to document their presence. Isolates were recorded with a Primary Record and Location Map, while sites were recorded with a Primary Record, Archaeological Site Record, Location Map, Sketch Map, and any other pertinent forms. Any cultural resource that contained at least three artifacts in a ten-square-meter area or consisted of one or more features was considered a site. Any indications of cultural presence in the Project Area that failed to meet the definition of a site were recorded as isolates or were noted on a location map.



Location: N:\2017\2017-222 700 Crocker Vacaville\MAPS\Cultural_Resources\Survey_Coverage\Crocker_SurveyTransects.mxd (CCH)-chinkelman 10/20/2017

Map Date: 10/20/2017
Photo Source: NAIP, 2016

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 3. Survey Transects

2017-222 700 Crocker Vacaville

5.0 RESULTS

5.1 Records Search

The records search consisted of a review of previous research and literature, records on file with the NWIC for previously recorded resources, and historical aerial photographs and maps of the vicinity.

5.1.1 Previous Research

Five previous cultural resource investigations have been conducted within 0.5 mile of the property, covering approximately 50 percent of the total area surrounding the property within the record search radius (Table 1). [redacted] The previous studies were conducted between 1985 and 2012.

Table 1. Previous Cultural Studies In or Within 0.5 Mile of the APE

Report Number	Author(s)	Report Title	Year	Includes Portion of the APE?
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

The results of the records search indicate that none of the property has been previously surveyed for cultural resources, and therefore, a pedestrian survey of the APE was warranted.

The records search also determined that four previously recorded historic-era cultural resources are located within 0.5 mile of the APE (Table 2). [redacted]

Table 2. Previously Recorded Cultural Resources In or Within 0.5 Mile of the APE

Site Number CA-SOL-	Primary Number P-48-	Recorder and Year	Age/ Period	Site Description	Within APE?
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

5.1.2 Records

The Office of Historic Preservation's Directory of Properties, Historic Property Data File (dated 5 April 2012) did not include any resources within 0.5 mile of the Project Area (OHP 2012).

The National Register Information System (NPS 2016) failed to reveal any eligible or listed properties within the Project Area. The nearest National Register properties are located 4.3 miles southwest of the Project Area in Historic Downtown Vacaville.

Resources listed as California Historical Landmarks (OHP 1996) and by the OHP (OHP 2016) were reviewed on October 2, 2017. The nearest listed landmark is #534: the Vaca-Pena Adobe in Vacaville (plaque located 6.5 miles southwest of the Project Area).

A review of *Historic Spots in California* (Kyle 2002) mentions the Rancho Los Putos land grant and Vaca Valley. Juan Manuel Vaca and Juan Felipe Peña petitioned for a grant of land in 1842, which was approved by Governor Micheltorena. This land grant included land that was already a part of John Reed Wolfskill's grant. After that heated controversy was resolved by Micheltorena in Wolfskill's favor, the first settlers of Vaca Valley built adobe homes two miles southwest of the present City of Vacaville near Lagoon Valley. The Peña Adobe is still standing and is listed as Landmark #534. Kyle (2002) also mentions that Don Manuel Vaca deeded nine square miles of Rancho Los Putos to William McDaniel, who paid $3,000 for the Rancho and agreed to lay out a town and name it Vacaville.

Historic GLO land patent records from the BLM's patent information database (BLM 2016) revealed that the Project Area land was part of almost 45,000 acres in California granted to Juan Manuel Vaca and Juan Felipe Peña in 1858, known as the Rancho Los Putos.

Table 3. GLO Land Patent Records

Patentee	Patent Date	Serial Number	Patent Type/Authority	Location
Pina, Juan Felipe Vaca, Juan Manuel	6/4/1858	CACAAA 000076	March 3, 1851: Grant-Spanish/Mexican (9 Stat. 631)	43,441 acres of land including the Project Area

A RealQuest online property search for APN 0106-240-340 revealed the property consists of 52.57 acres of vacant industrial land. No other property history information was on record with RealQuest.

The Caltrans Bridge Local and State Inventories (Caltrans 2017a, Caltrans 2017b) did not list any historic bridges in or within 0.5 mile of the Project Area.

[redacted]

A review of the Vacaville local historical registry did not reveal any resources in the vicinity of the Project Area.

5.1.3 Map Review and Aerial Photographs

The review of historical aerial photographs and maps of the Project Area provide information on the past land uses of the property. Based on this information, the property was initially used for a 1870s railroad grade segment and undeveloped land. Following is a summary of the review of historical maps and photographs.

- The 1858 GLO Plat map for Township 7 North, Range 1 West indicates the Project Area land as within the Rancho Los Putos Land Grant.
- The 1908 USGS Vacaville, California (1:62,500) and 1917 USGS Wolfskill, California (1:31,680) maps show [redacted] The Project Area is located within the Los Putos Land Grant.
- The 1953 USGS Allendale, CA (7.5-minute) map shows the Gibson Canyon Creek within the center of the Project Area. [redacted] Interstate 505 is located just west of the Project Area.
- The 1953 photorevised 1968 and 1973 USGS Allendale CA (7.5-minute) map shows the [redacted] Gibson Canyon Creek is located within of the Project Area. An irrigation canal is revealed within the northern cut-out of the Project Area. The canal is an auxiliary canal of the Putah South Canal, located 0.3 mile east of the Project Area. APN data reveals the canal as the Kilkenny Canal No. 3.
- A review of aerial photographs from 1968 reveal the [redacted] Gibson Canyon Creek, and the canal within the Project Area. The Project Area is bounded by I-505 to west and Midway Road to the north. No structures are revealed within the Project Area on the 1968 aerials. At this time Gibson Canyon Creek remains in its natural alignment through the Project Area.
- The aerial photographs from 1993 reveal an industrial building located south of Project Area. Gibson Canyon Creek remains within the Project Area, however; it appears to have been

rechanneled to the north for flood channel. [redacted] The irrigation canal is visible on aerials.

- All other aerial photographs from 2005 to present show the large industrial building to the south and the canal and channelized creek to the north. [redacted]

5.2 Sacred Lands File Results

A search of the Sacred Lands File by the NAHC failed to indicate the presence of Native American cultural resources in the Project Area. A record of all correspondence is provided in Attachment B.

5.3 Other Interested Party Consultation Results

No responses to the letters sent to the Solano County Historical Society have been received as the preparation of this document.

5.4 Field Survey Results

An intensive pedestrian survey, designed to identify historic and prehistoric sites and artifacts within the approximate 56-acre 700 Crocker Project Area, was conducted by ECORP archaeologist Megan Webb on October 5, 2017. The Project Area was surveyed using parallel transects oriented in an east-west and north-south direction and spaced 15 meters apart (Figure 3). The majority of the property consisted of fallow undeveloped fields with 50 to 70 percent surface visibility (Figures 4 and 5). It was apparent that the surface has been modified as a result of years of grading and disking of the Project Area and the construction of the canal. The industrial parcel is enclosed with an eight-foot-tall chain-link fence. Although not within the APE, dirt access roads are located along the both sides of the canal. The Project Area was easily accessible and completely surveyed using parallel transects.

According to historic aerial photographs and maps, Gibson Canyon Creek was rerouted north to its current alignment sometime after 1968 and before 1993. The creek currently travels around the existing industrial parcel fence line. Several photographs were taken identifying the creek (Figure 6). [redacted]

Figure 4. Project Area overview of area north of the canal (view west) October 5, 2017.

Figure 5. Project Area overview of area north of existing building (view southwest) October 6, 2017.

Figure 6. Overview photograph of Gibson Canyon Creek (view southeast) October 6, 2017.

Figure 7. [redacted]

5.4.1 Cultural Resources within the Project Area

[redacted] was confirmed by ECORP to extend into the Project Area. A site description follows, and a confidential DPR 523 record is provided in Attachment D.

[redacted]

[redacted]

[redacted]

Figure 8. [redacted]

6.0 EVALUATION OF ELIGIBILITY

[redacted] was evaluated for eligibility for the CRHR and NRHP by ECORP for another project (Fuerstenberg and Webb 2017) and was determined to be not eligible for the CRHR and NRHP, pending agency concurrence.

Because that prior evaluation did not take into consideration the portion that extends into the current Project Area, an updated evaluation of significance was necessary for this project.

6.1 Federal Evaluation Criteria

Under federal regulations implementing Section 106 of the NHPA (36 CFR 800), cultural resources identified in the Project Area must be evaluated using NRHP eligibility criteria. The eligibility criteria for the NRHP are as follows (36 CFR 60.4):

"The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of state and local importance that possess aspects of integrity of location, design, setting, materials, workmanship, feeling, association, and

(A) is associated with events that have made a significant contribution to the broad patterns of our history;

(B) is associated with the lives of a person or persons significance in our past;

(C) embodies the distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses high artistic value, or represents a significant and distinguishable entity whose components may lack individual distinction; or

(D) has yielded or may be likely to yield information important in prehistory or history.

In addition, the resource must be at least 50 years old, except in exceptional circumstances (36 CFR 60.4).

Historical buildings, structures, and objects are usually eligible under Criteria A, B, and C based on historical research and architectural or engineering characteristics. Archaeological sites are usually eligible under Criterion D, the potential to yield information important in prehistory or history. An archaeological test program may be necessary to determine whether the site has the potential to yield important data. The lead federal agency, in this case, USACE, makes the determination of eligibility based on the results of the test program and seeks concurrence from the State Historic Preservation Officer (SHPO).

Effects to NRHP-eligible resources (historic properties) are adverse if the project may alter, directly or indirectly, any of the characteristics of an historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

6.2 State Evaluation Criteria

Under state law (CEQA) cultural resources are evaluated using CRHR eligibility criteria in order to determine whether any of the sites are Historical Resources, as defined by CEQA. CEQA requires that impacts to Historical Resources be identified and, if the impacts would be significant, that mitigation measures to reduce the impacts be applied.

An Historical Resource is a resource that meets the following criteria:

(1) is listed in or has been determined eligible for listing in the CRHR by the State Historical Resources Commission;

(2) is included in a local register of historical resources, as defined in Pub. Res. Code 5020.1(k);

(3) has been identified as significant in an historical resources survey, as defined in Pub. Res. Code 5024.1(g); or

(4) is determined to be historically significant by the CEQA lead agency [CCR Title 14, Section 15064.5(a)]. In making this determination, the CEQA lead agency usually applies the CRHR eligibility criteria.

For this Project, only the fourth definition of an Historical Resource is applicable because there are no resources previously determined eligible or listed on the CRHR, there are no resources included in a local register of historical resources, and no resources identified as significant in a qualified historical resources survey.

The eligibility criteria for the CRHR are as follows [CCR Title 14, Section 4852(b)]:

(1) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;

(2) It is associated with the lives of persons important to local, California, or national history.

(3) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or

(4) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association [CCR Title 14, § 4852(c)].

Historical buildings, structures, and objects are usually eligible under Criteria 1, 2, and 3 based on historical research and architectural or engineering characteristics. Archaeological sites are usually eligible under Criterion 4, the potential to yield information important in prehistory or history. Cultural resources determined eligible for the NRHP by a federal agency are automatically eligible for the CRHR.

Impacts to an Historical Resource (as defined by CEQA) are significant if the resource is demolished or destroyed or if the characteristics that made the resource eligible are materially impaired [CCR Title 14, § 15064.5(a)].

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

7.0 MANAGEMENT CONSIDERATIONS

7.1 Conclusions

A previously recorded resource [redacted] was evaluated using the NRHP and CRHR criteria and were found not eligible for the NRHP or CRHR.

If a Section 404 permit is necessary for the Project and the USACE determines that the sites within the Project Area are not eligible for the NRHP and are not historic properties, and the SHPO concurs, then no mitigation measures for identified cultural resources in the Project Area will be necessary under Section 106.

If the CEQA lead agency determines that the resources in the Project Area are not eligible for the CRHR and, therefore, are not Historical Resources for the purpose of CEQA, no mitigation measures for identified cultural resources will be necessary under CEQA.

Until the lead agencies concur with the identification and evaluation of eligibility of cultural resources, including archaeological sites and standing structures, no ground-disturbing activity or demolition should occur.

7.2 Likelihood for Subsurface Cultural Resources

Due to the presence of alluvium along Gibson Canyon Creek, and given the likelihood of prehistoric archaeological sites located along perennial waterways, there always exists the potential for undiscovered buried prehistoric archaeological sites in the Project Area.

7.3 Post-Review Discoveries

There always remains the potential for ground-disturbing activities to expose previously unrecorded cultural resources. Both CEQA and Section 106 of the NHPA require the Lead Agency to address any unanticipated cultural resource discoveries during project construction. Therefore, ECORP recommends the following mitigation measures be adopted and implemented by the Lead Agency to reduce potential adverse impacts to Less than Significant:

- If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for

prehistoric and historic archaeologist, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no-work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, he or she shall immediately notify the lead agencies and applicable landowner. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures, if the find is determined to be eligible for inclusion in the NRHP or CRHR. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not eligible for the NRHP or CRHR; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, he or she shall ensure reasonable protection measures are taken to protect the discovery from disturbance (AB 2641). The archaeologist shall notify the Solano County Coroner (per §7050.5 of the Health and Safety Code). The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the NAHC, which then will designate a Native American Most Likely Descendant (MLD) for the project (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

The Lead Agency is responsible for ensuring compliance with these mitigation measures because damage to significant cultural resources is in violation of CEQA and Section 106. Section 15097 of Title 14, Chapter 3, Article 7 of CEQA, *Mitigation Monitoring or Reporting*, "the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program."

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LIST OF ATTACHMENTS

Attachment A –Records Search Confirmation and Historical Society Coordination

Attachment B –Sacred Lands File Coordination

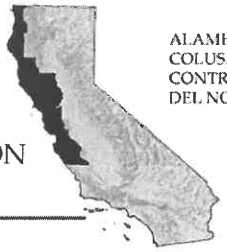
Attachment C – ***Redacted*** Project Area Photographs

Attachment D – ***Redacted*** Cultural Resource Site Locations and Site Records

ATTACHMENT A

Records Search Confirmation and Historical Society Coordination

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM



ALAMEDA, COLUSA, CONTRA COSTA, DEL NORTE, HUMBOLDT, LAKE, MARIN, MENDOCINO, MONTEREY, NAPA, SAN BENITO, SAN FRANCISCO, SAN MATEO, SANTA CLATA, SANTA CRUZ, SOLANO, SONOMA, YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
http://www.sonoma.edu/nwic

NWIC Billing Worksheet

IC File Number: 17-0996

Client Name: Megan Webb Phone:

Affiliation: ECORP Consulting, Inc. Email: mwebb@ecorpconsulting.com

Proj Name/Number: 700 Crocker 2017-222

Date Request Rec'd: 9/27/2017 Date of Response: 9/27/2017

Check In:	Check Out:	Check In:	Check Out:
In-person Time:		Hour(s):	$
Staff Time:		Hour(s):	$
Shape Files:		Number:	$
Custom Map Features:		Number:	$
Digital Database Record:		Number of Row(s):	$
Quads:		Number:	$
Address-mapped Flat Fee:			$
Hard Copy (Xerox/Computer) Pages:		Page(s):	$
Labor Charge:		Hour(s):	$
PDF Pages:		Page(s):	$
PDF Flat Fee:			$
Other:	CHRIS Data Request		$
		Subtotal	$

Multi-Day Start: Multi-Day End: $

2017-222/001
Records Search
Megan Webb

Rapid response surcharge of 50% of total cost: $

Total: $

Information Center Staff: Dana Marty

Sonoma State University Customer ID: 0001001567

Sonoma State University Invoice No.:

CHRIS Access and Use Agreement No.: 034

This is not an invoice. Sonoma State University will send separate invoice.

October 2, 2017

Solano County Historical Society
Old Town Hall
618 East Main Street
Vacaville, CA 95688

RE: Cultural Resources Identification Effort for the 700 Crocker Project, Solano County, California T 7N, R 1W, Unsectioned portion of the Los Putos Land Grant (ECORP Project No. 2017-222).

Dear Solano County Historical Society:

ECORP Consulting, Inc. has been retained to assist in the planning of the removal of tree obstruction on the project indicated above. The Project Area is located east of Interstate 505 and north of Crocker Drive in the City of Vacaville, California. The Project proposes to construct an approximate 700,000 square foot industrial building on about 60 acres of land. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect.

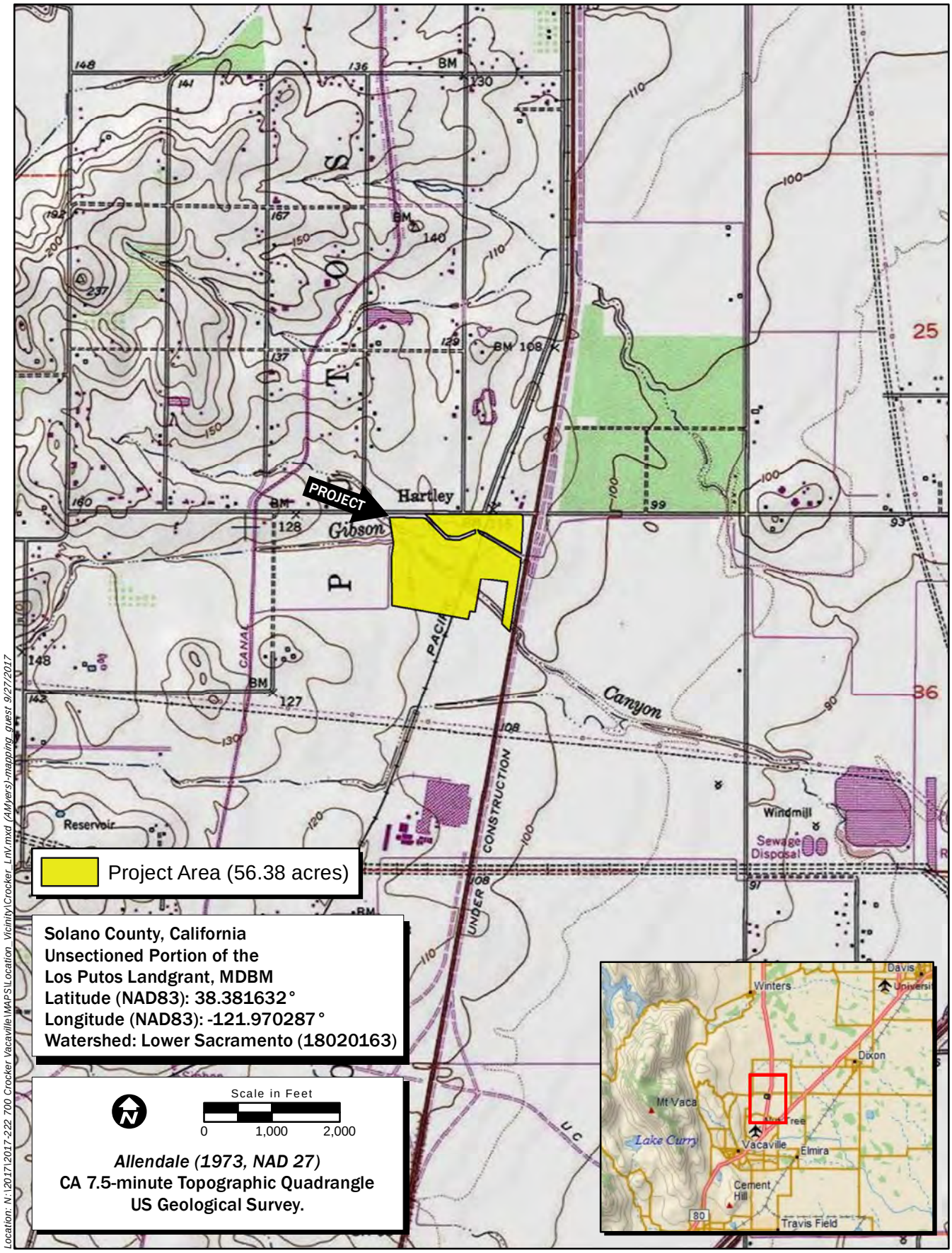
Included is a map showing the project area outlined. We would appreciate input on this undertaking from the historical society with concerns about possible cultural properties or potential impacts within or adjacent to the area of potential effect. If possible, please fax your response to my attention at (916) 782-9134. If you have any questions, please contact me at (916) 782-9100 or mwebb@ecorpconsulting.com.

Thank you in advance for your assistance in our cultural resource management study.

Sincerely,

Megan Webb

Megan Webb
Associate Archaeologist



Location: N:\2017\2017-222 700 Crocker Vacaville\MAPS\Location_Vicinity\Crocker_LnV.mxd (AMyers)-mapping_guest 9/27/2017

Map Date: 9/27/2017

iService Layer Credits: Copyright:© 2014 DeLorme
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ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Project Location and Vicinity

2017-222 700 Crocker Vacaville

ATTACHMENT B

Sacred Lands File Coordination

Sacred Lands File & Native American Contacts List Request

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 – Fax
nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: 700 Crocker Vacaville Project (ECORP No. 2017-222)

County: Solano County

USGS Quadrangle: Allendale, California

Township: 7 North Range: 1 West Section: Unsectioned portion of the Los Putos Landgrant

Company/Firm/Agency: ECORP Consulting, Inc.

Contact Person: Megan Webb

Street Address: __2525 Warren Drive_____

City: __Rocklin_____Zip:___95677_____

Phone: __(916) 782-9100_____

Fax: __(916) 782-9134_____

Email: mwebb@ecorpconsulting.com

Project Description:

See attached letter and map.

September 28, 2017

Ms. Sharaya Souza
Associate Governmental Program Analyst
Native American Heritage Commission
1550 Harbor Blvd, Suite 100
West Sacramento, CA 95691

RE: Cultural Resources Identification Effort for the 700 Crocker Vacaville Project, , Solano County, California Township 7 North, Range 1 West and Unsectioned portion of the Los Putos Land grant (ECORP Project No, 2017-222).

Dear Ms. Souza:

ECORP Consulting, Inc. has been retained to assist in the planning of the development on the project indicated above. The Project Area is located east of Interstate 505 and north of Crocker Drive in the City of Vacaville, California. The Project proposes to construct an approximate 700,000 square foot industrial building on about 60 acres of land. As part of the identification effort, we are seeking information from all parties that may have knowledge of or concerns with historic properties or cultural resources in the area of potential effect.

Included is a map showing the project area outlined. We would appreciate the results of your search of the Sacred Lands File and list of tribal contacts who can be contacted to provide input on this undertaking.

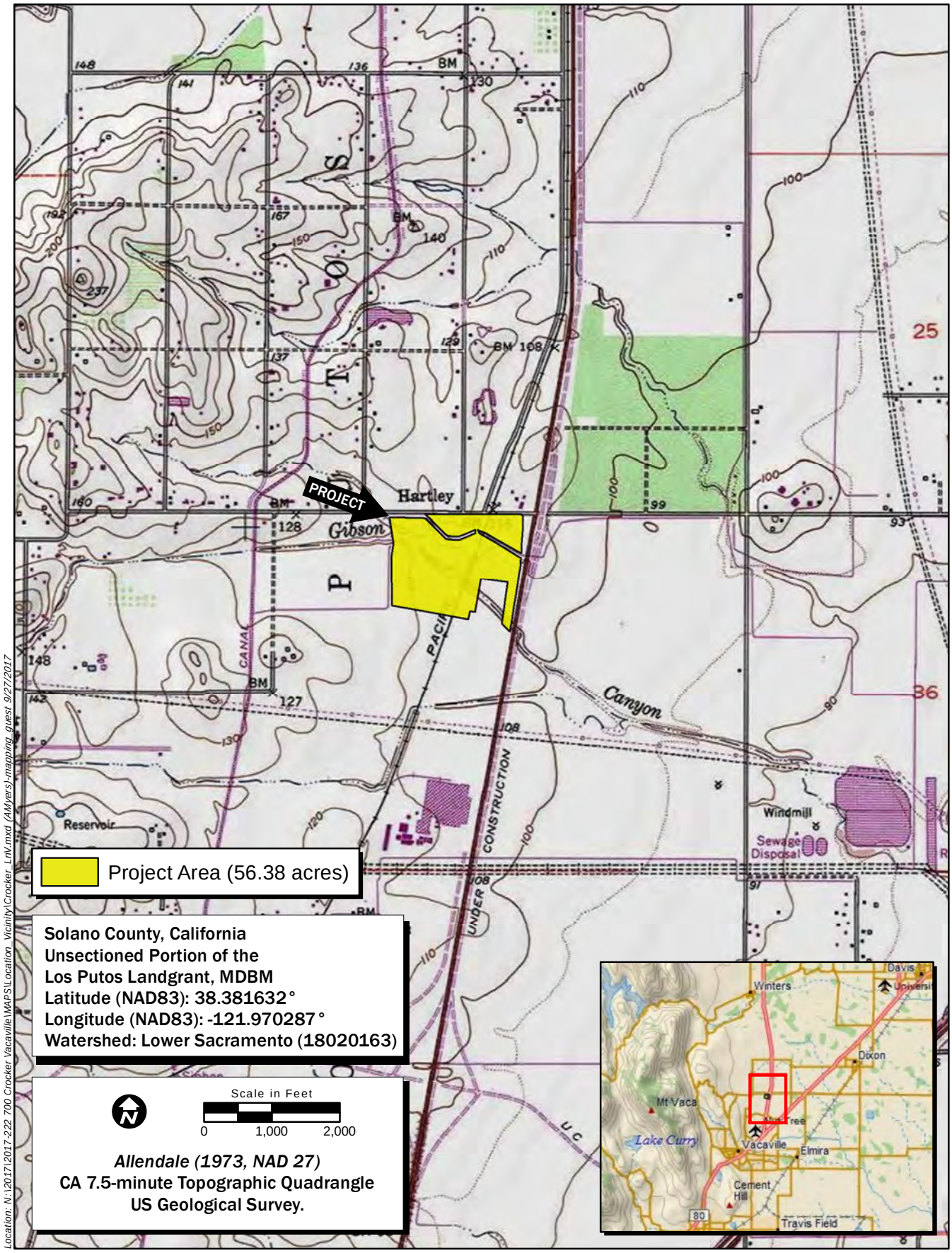
Please email or fax your response to my attention at mwebb@ecorpconsulting.com or (916) 782-9134. If you have any questions, please contact me at (916) 782-9100.

Thank you in advance for your assistance.

Sincerely,

Megan Webb

Megan Webb
Associate Archaeologist



Location: N:\2017\2017-222 700 Crocker Vacaville\MAPS\Location_Vicinity\Crocker_LnV.mxd (AMyers)-mapping_guest 9/27/2017

Map Date: 9/27/2017

iService Layer Credits: Copyright:© 2014 DeLorme
Copyright:© 2013 National Geographic Society, i-cubed

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1. Project Location and Vicinity

2017-222 700 Crocker Vacaville

NATIVE AMERICAN HERITAGE COMMISSION
Environmental and Cultural Planning Department
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710

October 17, 2017

Megan Webb
ECORP Consulting

Sent by Email: mwebb@ecorpconsulting.com
Number of Pages: 2

RE: 700 Crocker Vacaville Project, Solano County

Dear Ms. Webb:

A record search of the Native American Heritage Commission (NAHC) *Sacred Lands File* was completed for the area of potential project effect (APE) referenced above with negative results. **Please note that the absence of specific site information in the *Sacred Lands File* does not indicate the absence of Native American cultural resources in any APE.**

I suggest you contact all of those listed, if they cannot supply information, they might recommend others with specific knowledge. The list should provide a starting place to locate areas of potential adverse impact within the APE. **By contacting all those on the list, your organization will be better able to respond to claims of failure to consult.** If a response has not been received within two weeks of notification, the NAHC requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact via email: Sharaya.souza@nahc.ca.gov.

Sincerely,

Sharaya Souza
Staff Services Analyst
(916) 573-0168

Native American Heritage Commission
Native American Contacts
10/16/2017

Cortina Indian Rancheria of Wintun Indians
Charlie Wright, Chairperson
P.O. Box 1630 Wintun / Patwin
Williams , CA 95987
(530) 473-3274 Office

(530) 473-3301 Fax

Yocha Dehe Wintun Nation
Leland Kinter, Chairperson
P.O. Box 18 Wintun (Patwin)
Brooks , CA 95606
lkinter@yochadehe-nsn.gov
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This list is only applicable for contacting local Native Americans with regard to cultural resources assessments for the proposed 700 Crocker Vacaville Project, Solano County.

ATTACHMENT C

Redacted Project Area Photographs

ATTACHMENT D

Redacted Cultural Resource Site Locations and Site Records

GEOTECHNICAL EXPLORATION REPORT

on

Proposed Industrial Building Project
700 Crocker Drive, Vacaville California

for

LDK Ventures, LLC

By

KC ENGINEERING COMPANY

Project No. VV4376

3 November 2017

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Project No. VV4376
3 November 2017

Mr. Bud Schiveley
LDK Ventures, LLC
3140 Peacekeeper Way
McClellan, CA 95652

Subject: Proposed Industrial Building
700 Crocker Drive
Vacaville, California
GEOTECHNICAL EXPLORATION REPORT

Dear Mr. Schiveley:

In accordance with your authorization, **KC ENGINEERING COMPANY** has explored the geotechnical conditions of the surface and subsurface soils at the subject site for the proposed Industrial Building project to be constructed at the subject site.

The accompanying report presents our conclusions and recommendations based on our exploration. Our findings indicate that the proposed Industrial Building project is geotechnically feasible for construction on the subject site provided the recommendations of this report are carefully followed and are incorporated into the project plans and specifications.

Should you have any questions relating to the contents of this report or should you require additional information, please contact our office at your convenience.

Respectfully Submitted,
KC ENGINEERING COMPANY

Reviewed by,

David V. Cymanski, G.E.
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GEOTECHNICAL EXPLORATION

Purpose and Scope

The purpose of the geotechnical exploration for the proposed Industrial Building project to be constructed at 700 Crocker Drive in Vacaville, California, was to determine the surface and subsurface soil conditions at the subject site. Based on the results of the exploration, geotechnical criteria were established for the grading of the site, the design of foundations, slabs-on-grade, pavement sections and the construction of other related facilities on the property.

In accordance with your authorization, our exploration services included the following tasks:

a. A review of available geotechnical and geologic literature concerning the site and vicinity;
b. Site reconnaissance by the Geotechnical Engineer to observe and map surface conditions;
c. Drilling of a total of 8 exploratory borings and sampling of the subsurface soils;
d. Laboratory testing of the samples obtained to determine their classification and engineering characteristics;
e. Analysis of the data and formulation of conclusions and recommendations; and
f. Preparation of this written report.

Site Location and Description

The subject site is located at 700 Crocker Drive in the City of Vacaville, California as shown on Figure 1 "Aerial Vicinity Map" included in the Appendix of this report. The property consists of approximately 35.2 acres which includes the existing old Savemart grocery warehouse structure and related site improvements. The proposed structure is planned to be located in the field north of the existing warehouse building. The field area is relatively flat and covered with weeds and a few scattered trees. The area has been recently disked. Stockpiled fill areas are located on the northwest, north central and southcentral areas of the field. An existing electrical transformer is located on the east side of the field area. Concrete pavement for a loading dock structure is present on the southeast. An open cut earthen drainage ditch is located just north of the northern chain link fence. An erosion scar is located on the southern bank of the ditch to the northeast of the field area.

The above description is based on a reconnaissance of the site by the Geotechnical Engineer, a review of a "Conceptual Site Plan" prepared by Ware Malcomb dated 6/13/17 and a review of a Google Earth image dated 5/20/17. The Google Earth image was used as the basis for our "Aerial

Vicinity Map" included as Figure 1, and the Conceptual Site Plan was used as our "Site Plan" included as Figure 2 in the Appendix.

Proposed Construction

We understand that the proposed Industrial Building structure will be constructed on the northern half of the property as shown on Figure 2, "Site Plan" in the Appendix. The Industrial Building structure is planned to be approximately 686,980 square feet and constructed with a reinforced concrete slab floor and tilt-up walls with interior structural steel columns and roof truss system. Interior office space is planned to occupy approximately 61,828 square feet. We anticipate structural loading to have wall loads of about 5,000 to 7,500 p.l.f. with column loads on the order of 25 to 75 kips. Truck loading docks are planned on the north and south sides of the structure. Demolition of the loading dock and metal building structures on the east are expected. New parking lot construction is planned on the east. Perimeter truck drive lanes and parking are planned. One or two new access roads are planned to extend off of Midway Road on the north. Additional site improvements will consist of underground utilities, lighting, garbage enclosures, storm water bio-filtration swales or basins and landscaping.

Field Exploration

The field exploration was performed on October 11th and 12th of 2017, and included a reconnaissance of the site and the drilling of eight exploratory test borings at the approximate locations shown on Figure 2, "Site Plan". Bulk samples of the building pad and proposed parking lot/drive lane subgrade were also obtained.

The borings were drilled to a maximum depth of 25 feet below the existing ground surface. The drilling was performed with a Mobile B-24 drill rig using power-driven, four-inch diameter solid flight augers. Visual classifications were made from auger cuttings and the samples in the field. As the drilling proceeded, relatively disturbed tube samples were obtained by driving a 3-inch O.D., California split-tube sampler, containing thin brass liners, into the boring bottom in accordance with ASTM D3550. The samplers were driven into the in-situ soils at various depths under the impact of a 140-pound hammer having a free fall of 30 inches. The number of blows required to advance the sampler 12 inches into the soil, after seating the sampler 6 inches, were adjusted to the standard penetration resistance (N-Value). The raw blow counts obtained using the California sampler were corrected to equivalent N-Values using Burmister's (1948) energy and diameter correction formula. When the sampler was withdrawn from the boring bottom, the samples were removed, examined for identification purposes, labeled and sealed to preserve the in-situ moisture content, and transported to our laboratory for testing.

Laboratory Testing

The laboratory testing program was directed towards providing sufficient information for the determination of the engineering characteristics of the site soils so that the recommendations outlined in this report could be formulated. The laboratory test results are presented on the respective Boring Logs and data sheets in the Appendix.

Moisture content and dry density tests (ASTM D2937) were performed on representative relatively disturbed soil samples in order to determine the consistency of the soil and the moisture variation throughout the explored soil profile as well as estimate the compressibility of the underlying soils.

The strength parameters of the foundation soils were determined from a direct shear test (ASTM D3080) and unconfined compression tests (ATSTM D2166) performed on selected relatively disturbed soil samples. Standard field penetration resistance (N-Values) and pocket penetrometer readings also assisted in the determination of strength and bearing capacity. The standard penetration resistances and pocket penetrometer readings are recorded on the respective "Log of Test Boring".

In order to assist in the identification and classification of the subsurface soils, sieve analysis tests (ASTM D6913) and Atterberg Limits tests (ASTM D4318) were performed on selected soil samples. The Atterberg Limits test results were used to estimate the expansion potential of the near surface soils. An expansion Index test (ASTM D4829) was also performed on a sample representative of the pad soils. The sieve analysis results also aided in our liquefaction analysis.

An R-Value test (Cal Test 301) was performed on a composite bulk sample representative of the proposed subgrade to assist in pavement section design.

A representative bag sample of the near surface soils was obtained to evaluate the presence and concentration of water soluble sulfates in accordance with California Test Method 417. These test results were used to identify the corrosion potential of the soils to at or below grade concrete. Additional soil corrosion potential tests (pH, Resistivity & Chlorides) were also performed. A discussion is presented in the "Soil Corrosivity" section of this report.

Subsurface Conditions

Based on our field exploration and laboratory testing, the surface and subsurface soil conditions consist of poorly stratified alluvial deposits of variable thickness across the building footprint. In general, the upper 1 to 12 feet consists of moderately to highly expansive, firm to very stiff sandy

and silty clays and clayey silts mixed with variable amounts of sands and gravels. The upper 12 inches across the entire site was dry and loose due to recent disking. The underlying materials then consist of variable layers and thicknesses of medium dense to dense clayey and silty sands, and very stiff to hard silty and sandy clays to the maximum depth explored of 25 feet. It is noted that the upper 4 to 5 feet in Borings 1 and 8 consist of dry to moist and firm to stiff fill materials. The Geologic Map, included herein as Figure 3, indicate that an old railroad and Gibson Canyon Creek crossed the eastern portion of the site.

Groundwater was not encountered in any of the borings at the time of drilling. Fluctuations in the groundwater conditions can occur with variations in seasonal rainfall, site irrigation and variations in subsurface stratification.

A more thorough description and stratification of the soils encountered along with the results of the laboratory tests are presented on the respective "Log of Test Boring" in the Appendix. The approximate locations of the boring are shown on Figure 2.

Soil Corrosivity

A representative composite sample of the near surface building pad soil (upper 5 feet) was collected and transported to Sunland Analytical in Rancho Cordova for testing of water soluble sulfates, pH, minimum resistivity and chlorides per California Test Methods.

The testing indicates a sulfate content of 15.3 ppm (mg/kg), a chloride content of 6.5 ppm, a minimum resistivity of 1,100 ohm-cm, and a soil pH of 6.57 for the sample collected. It is noted that the sulfate test results indicate "not-applicable" or "S0" sulfate exposure to concrete as identified in the Durability Requirements, Section 1904 of the 2016 California Building Code, and Tables 19.3.1.1 of ACI 318-14 Building Code Requirements for Structural Concrete. No cement type restriction is required, however, we do recommend that a Type I/II cement be utilized in concrete mixes for additional sulfate and corrosion resistance.

The Caltrans Corrosion Guidelines[1] defines a corrosive site as one where the soil and/or water has a sulfate concentration of 2,000 ppm or more, a chloride concentration of 500 ppm or more, a pH of 5.5 or less, and a minimum resistivity less than 1,000 ohm-cm. Based on these criteria, the soils at the site are not considered to have a severe corrosion potential to buried metal.

[1] California Department of Transportation Corrosion and Structural Concrete Field Investigation Branch, Materials Engineering and Testing Services, *Corrosion Guidelines*, Version 2.1, January 2015.

KC Engineering Company is not a corrosion engineering firm. Therefore, to further define the soil corrosion potential and interpret the above test results, or to design cathodic protection or grounding systems, a licensed Corrosion Engineer should be consulted.

Site Geology

According to the Geologic Map of the Lodi Quadrangle[2], the site exists in a transitional zone with geologic deposits underlying the northeast portion of the site as the Pliocene-aged Tehama Formation and the remainder of the site as Pleistocene-aged Alluvial Fan deposits. A partial geologic map showing the site is included in the Appendix as Figure 3, "Geologic Map". The Tehama Formation is noted to consist of poorly consolidated, nonmarine, gray to maroon siltstone, quartzarenite sandstone, tuff and pebble to cobble conglomerate. The alluvial fan deposits consist of varying layers of sands, silts, clays and gravels that are poorly sorted and bedded. The subsurface deposits encountered during our exploration generally correlate with alluvial deposits.

Geo-Hazards

Seismicity & Ground Motion Analysis

The site is not located within an Alquist-Priolo Earthquake Fault Zone[3]. There are no known active faults crossing the site as mapped and/or recognized by the State of California. However, Vacaville is located in a seismically-active region and earthquake related ground shaking should be expected during the design life of structures constructed on the site. The California Geological Survey has defined an active fault as one that has had surface displacement in the last 11,000 years, or has experienced earthquakes in recorded history.

Based on our review of the Fault Activity Map of California[4] and the USGS National Seismic Hazard Maps-Source Parameters[5], the nearest major active faults are the Great Valley 4b Fault segment, the Green Valley Fault and the Hunting Creek-Berryessa Fault, located approximately 3.4 miles east, 12.7 miles southwest, and 13.8 miles northwest of the site, respectively. Numerous other active faults in the Bay Area may also produce significant seismic shaking at the site.

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[2] T. E. Dawson, 2009, *Preliminary Geologic Map of the Lodi 30'x60' Quadrangle, California*, California Geological Survey

[3] Hart, E.W. and Bryant, W.A., 1997, *Fault-Rupture Hazard Zones in California, Alquist-Priolo Earthquake Fault Zoning Act with Index to Earthquake Fault Zones Maps*, California Department of Conservation, Division of Mines and Geology, Special Publication 42, Interim Revision 2007.

[4] Jennings, C.W. and Bryant, W.A., 2010, *Fault Activity Map of California*, California Geological Survey Geologic Data Map No. 6, scale 1:750,000

[5] U.S. Geological Survey, 2008 National Seismic Hazards Maps – Source Parameters, accessed 10/29/17, from USGS web site: https://earthquake.usgs.gov/cfusion/hazfaults_2008_search/query_main.cfm

The 2016 CBC specifies that the potential for liquefaction and soil strength loss should be evaluated, where applicable, for the Maximum Considered Earthquake Geometric Mean (MCE_G) peak ground acceleration with an adjustment for site class effects in accordance with American Society of Civil Engineer (ASCE 7-10)[6]. The MCE_G is peak ground acceleration is based on the geometric mean peak ground acceleration with a 2 percent probability of exceedance in 50 years. The MCE_G peak ground acceleration with adjustment for site class effects (PGA_M) was calculated to be 0.582g using the United States Geological Survey web-based seismic design tool with a site coefficient (F_{PGA}) of 1.0 for Site Class D.

Structures at the site should be designed to withstand the anticipated ground accelerations. Based on the USGS Seismic Design Maps[7] website and ASCE 7-10, the 2016 CBC earthquake design values are as follows:

Site Class:	D	
Mapped Acceleration Parameters:	S_S = 1.597g;	S_1 = 0.548g
Design Spectral Response Accelerations:	S_{DS} = 1.065g;	S_{D1} = 0.548g

The summary and detailed USGS design maps reports are included in Appendix.

Fault Rupture

The site is not located within an Alquist-Priolo Earthquake Fault Zone. Based on our review of geologic maps, no known active or inactive faults cross or project toward the subject site. In addition, no evidence of active faulting was visible on the site during our site reconnaissance. Therefore, it is our opinion that there is no potential for fault-related surface rupture at the subject site.

Landsliding

The subject site and immediate vicinity is relatively flat and therefore, not subject to seismically-induced landslide hazards. However, it is noted that an erosion scar is located on the southern bank of the earthen drainage ditch located at the northeastern portion of the site. This area may be subject to additional movement during a seismic event. This scar should be mitigated with rip-rap.

[6] American Society of Civil Engineer (ASCE), 2010, Minimum Design Loads for Buildings and Other Structures, Standard 7-10.
[7] http://earthquake.usgs.gov/designmaps/us/application.php, accessed 10/29/17

Liquefaction

Soil liquefaction is a phenomenon in which loose and saturated cohesionless soils are subject to a temporary, but essentially total loss of shear strength, due to pore pressure build-up under the reversing cyclic shear stresses associated with earthquakes. Soils typically found most susceptible to liquefaction are saturated and loose, fine to medium grained sand having a uniform particle range and less than 35% fines passing the No. 200 sieve, and a corrected standard penetration blow count $(N_1)_{60}$ less than 30. According to Special Publication 117A by the California Geological Survey, the assessment of hazards associated with potential liquefaction of soil deposits at a site must consider translational site instability (i.e. lateral spreading, etc.) and more localized hazards such as bearing failure and settlement. The acceptable factor of safety against liquefaction is recommended in SP117 to be 1.3 or greater.

Based on our site exploration and laboratory test data, the soil profile within the upper 25 feet was found to consist of stiff to very stiff fine-grained cohesive clays, and dense to very dense silty and clayey sands with no groundwater. Materials deeper than the 25 feet depth explored are expected to be even denser and harder. Due to the dense nature of the sands and lack of groundwater, it is our opinion that liquefaction potential at the site is considered very low.

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

General

From a geotechnical point of view, the proposed Industrial Building and associated parking lot and driveway improvements are considered to be feasible for construction on the subject site provided the recommendations presented in this report are incorporated into the project plans and specifications.

All grading and foundation plans for the development must be reviewed by the Geotechnical Engineer prior to contract bidding or submittal to governmental agencies to ensure that the geotechnical recommendations contained herein are properly incorporated and utilized in design.

KC ENGINEERING CO. should be notified at least two working days prior to site clearing, grading, and/or foundation operations on the property. This will give the Soil Engineer ample time to discuss the problems that may be encountered in the field and coordinate the work with the contractor.

Field observation and testing during the grading and/or foundation operations must be provided by representatives of ***KC ENGINEERING CO.*** to enable them to form an opinion regarding the adequacy of the site preparation, the acceptability of fill materials, and the extent to which the earthwork construction and the degree of compaction comply with the specification requirements. Any work related to the grading and/or foundation operations performed without the full knowledge and under the direct observation of the Soil Engineer will render the recommendations of this report invalid.

Geotechnical Considerations

The primary geotechnical considerations for the Industrial Building structure are the presence of near surface un-documented fills, loose surficial soils and highly expansive soils. We recommend that the undocumented fills and stockpiled materials be over-excavated and debris removed. The upper 2 feet of the materials across the site are relatively loose and will need to be over-excavated, processed and compacted to minimize the potential for settlement. The site soils are prone to heave and shrink movements with changes in moisture content and, consequently, must be carefully considered in the design of grading, foundations, and drainage. Under the building pads and surrounding concrete flatwork, we recommend that the existing materials be lime treated to mitigate the expansive nature of the materials, as well as to provide a structural fill pad. Specific recommendations are presented in the "Grading" section of this report. The

recommendations provided in the following sections will minimize the detrimental effects of expansive soil movement. Also, we are providing alternative recommendations should the subgrade be lime treated to provide a more competent subgrade prior to aggregate base placement In addition, it is noted that an erosion scar is located on the southern bank of the earthen drainage ditch located at the northeastern portion of the site. This scar should be mitigated with rip-rap placement.

Demolition

Prior to building pad grading, demolition of the existing concrete pavements, underground utilities and any building foundations must be performed under the proposed pavements and building footprint, plus a 5 foot lateral over-build. Demolition should include the complete removal of all surface and subsurface structures. Where any of the following are encountered: concrete, storm drain systems, foundations, asphalt, buried pipelines, tanks, etc.; these should be removed with the exception of items specified by the owner for salvage. In addition, all underground structures must be located on the grading plans so that proper removal may be carried out. It is vital that ***KC ENGINEERING CO.***, intermittently observe the demolition operations and be notified in ample time to ensure that subsurface structures are not covered.

Excavations made by the removal of any structure should be left open by the demolition contractor for backfill in accordance with the requirements for engineered fill. The removal of any underground structures or utility pipelines should be done under the observation of the Soil Engineer to assure adequacy of the removal and that subsoils are left in proper condition for placement of engineered fills. Any soil exposed by the demolition operations, which are deemed soft or unsuitable by the Soil Engineer, shall be excavated as uncompacted fill soil and be removed as required by the Soil Engineer during grading. The demolition operation should be approved by the Soil Engineer prior to commencing building pad grading operations. Any resulting excavations should be properly backfilled with engineered fill under the observation of the Soil Engineer. Should the location of any localized excavation be found to underlie any structure, backfill should be compacted to a minimum relative compaction of 95% or the excavation widened to extend 5 feet beyond the footprint of the structure and backfilled to the specifications for engineered fill as recommended in the "Grading" section below.

Grading

As mitigation to minimize differential heave and shrink movements from the highly expansive clays and to minimize expected total and differential settlement across the building footprint, we recommend that the upper 3 feet of the Industrial Building's building pad be processed and compacted as well compacted structural fill by lime treatment. We recommend that the

structural fill pad be a minimum of 3 feet thick, extend 5 feet beyond the building footprint, and consist of the existing materials treated with high-calcium quicklime as described below. Alternatively, select import may be used to construct the structural fill pad. The upper 12 inches of the driveways and parking lots may also be lime treated as described herein and in the "Pavement" section below.

Grading activities may be performed during the rainy season, however, achieving proper compaction may be difficult due to excessive moisture; and delays may occur. Grading performed during the dry months will minimize the occurrence of the above problems. When project grading plans become available for our review, supplemental grading recommendations may be required.

The surface of the site in areas to be graded should be stripped to remove all existing vegetation and/or other deleterious materials. It is estimated that stripping depths of 1 to 2 inches may be necessary. Any material that is deemed to be topsoil and requiring stripping may not be used as engineered fill but may be stockpiled and used later for landscaping purposes.

After demolition, stripping and over-excavating any undocumented fills, and in general fill areas, it is recommended that the upper 12 inches be scarified, moisture conditioned and compacted to a minimum degree of relative compaction of 90% at least 3 percent above optimum moisture content as determined by ASTM D1557 Laboratory Test Procedure. As a minimum, the upper 12 inches of the existing grades, should be over-excavated and the exposed bottom 12 inches scarified, moisture conditioned and compacted as described above. After processing the lower 12 inches and compacting the native subgrade, the site may be brought to the desired finished grades by placing engineered fill in lifts of 8 inches in un-compacted thickness and compacting to a relative compaction of 90% at 3 percent over optimum in accordance with the aforementioned test procedure. All soils encountered during our investigation are suitable for use as engineered fill when placed and compacted at the recommended moisture content.

Any loose or soft soil materials must be excavated to undisturbed native ground. Excavated soil materials may be used as engineered fill with the approval of the Soil Engineer provided they do not contain debris or excessive organics.

As discussed above, it is recommended that the upper 3 feet of the building pad and adjacent concrete flatwork comprise the on-site materials modified with high calcium quicklime meeting ASTM C977. It is noted that the structural fill should extend at least 5 feet beyond the building footprint and to the edge of surrounding flatwork, whichever is greater. The building pad and adjacent flatwork area to be treated should be over-excavated to a depth of 1.5 feet below design

pad grade. The bottom 1.5 feet of the excavation can then be processed in place with lime, followed by placing the upper 1.5 feet and treating the upper lift.

The lime treatment should consist of a 5% mixture by dry weight. Based on a unit weight of 120 p.c.f., a spread rate of 9.0 p.s.f. each for the 18-inch mixing depths. In the pavement areas, the upper 12 inches of subgrade should also be lime treated with a minimum spread rate of 6.0 p.s.f. The lime treated soils should be compacted to at least 95% relative compaction of the maximum wet density per ASTM D1557 at a moisture content at least 2% above optimum. The lime treatment must be performed by a qualified soil stabilization contractor in general conformance with Caltrans Standard Specification Section 24. The product specification and quality control test results must be provided to us by the contractor for review and acceptance prior to the treatment operations. The lime should be spread and mixed with equipment capable of providing relatively uniform conditions. The lime treated sections must be mixed at least twice prior to compaction which must be performed within 24 hours after final mixing. After compaction, it is important to moist cure the lime treated soils until placement of the subsequent slab subbase materials (i.e. do not let pad dry out and desiccate).

Should select import material be used to establish the upper 36 inches of the structural fill pad or be required for general fill, the import material should be approved by the Soil Engineer before it is brought to the site. Where select import soil is used within the upper 36 inches of the pad, it should meet the following requirements:

a. Have an R-Value of not less than 25;
b. Have a Plasticity Index not higher than 12;
c. Not more than 15% passing the No. 200 sieve;
d. No rocks larger than 3 inches in maximum size;

The fill materials shall be placed in uniform lifts of not more than 8 to 12 inches in uncompacted thickness depending on size and weight of equipment used. Each layer shall be spread evenly and shall be thoroughly blade mixed during the spreading to obtain uniformity of material in each layer. Before compaction begins, the fill shall be brought to a water content that will permit proper compaction by either (a) aerating the material if it is too wet, or (b) spraying the material with water if it is too dry.

Compaction shall be by footed rollers or other types of acceptable compacting rollers. Rollers shall be of such design that they will be able to compact the fill to the specified density. Rolling shall be accomplished while the fill material is within the specified moisture content range. Rolling of each layer shall be continuous over its entire area and the roller shall make sufficient trips to ensure that the required density has been obtained. No ponding or jetting shall be permitted.

The standard test used to define maximum densities and optimum moisture content of all compaction work shall be the Laboratory Test procedure ASTM D1557 and field tests shall be expressed as a relative compaction in terms of the maximum dry density and optimum moisture content obtained in the laboratory by the foregoing standard procedure. Field density and moisture tests shall be made in each compacted layer by the Soil Engineer in accordance with ASTM D6938, respectively. When footed rollers are used for compaction, the density and moisture tests shall be taken in the compacted material below the surface disturbed by the roller. When these tests indicate that the compaction requirements for any layer of fill, or portion thereof, have not been met, the particular layer, or portion thereof, shall be reworked until the compaction requirements have been met.

Surface & Subsurface Drainage

A very important factor affecting the performance of structures and pavements is the proper design, implementation, and maintenance of surface drainage, as well as maintaining uniform moisture conditions around the structures. Ponded water will cause swelling and/or loss of soil strength and may also seep under structures. Should surface water be allowed to seep under the structures, differential foundation movement resulting in structural damage and/or standing water under the slab will occur. This may cause dampness to the floor which may result in mildew, staining, and/or warping of floor coverings. To minimize the potential for the above problems, dampproofing and waterproofing should be provided as required by Section 1805 of the 2016 CBC. In addition, the following surface drainage measures are recommended and must be maintained by the property owner in perpetuity:

a) Liberal building pad slopes and surface drainage must be provided by the project Civil Engineer to remove all storm water from the pad and to prevent storm and/or irrigation water from ponding adjacent to the structure foundations. The finished pad grade around the structures should be compacted and sloped 5% away from the exterior foundations and as required in Section 1804.4 of the 2016 CBC.

b) Enclosed or trapped planter areas adjacent to the structure foundations should be avoided if possible. Where enclosed planter areas are constructed, these areas must be provided with adequate measures to drain surface water (irrigation and rainfall) away from the foundation. Positive surface gradients and/or controlled drainage area inlets should be provided. Care should be taken to adequately slope surface grades away from the structure foundations and into area inlets. Drainage area inlets should be piped to a suitable discharge facility.

c) Adequate measures for storm water discharge from the roof gutter downspouts must be provided by the project Civil Engineer and maintained by the property owners at all times, such that no water is allowed to pond next to the structure. Closed pipe discharge lines should be connected to downspouts and discharged into a suitable drainage facility. It is important not to allow concentrated discharge on the surface of any slope so as to prevent erosion.

d) Site drainage should be designed by the project Civil Engineer. Civil engineering, hydraulic engineering, and surveying expertise is necessary to design proper surface drainage to assure that the flow of water is directed away from the foundations.

e) Over-irrigation of plants is a common source of water migrating beneath a structure. Consequently, the amount of irrigation should not be any more than the amount necessary to support growth of the plants. Foliage requiring little irrigation (drip system) is recommended for the areas immediately adjacent to the structures.

f) Landscape mounds or concrete flatwork should not be constructed to block or obstruct the surface drainage paths. The Landscape Architect or other landscaper should be made aware of these landscaping recommendations and should implement them as designed. The surface drainage facilities should be constructed by the contractor as designed by the Civil Engineer.

With respect to any proposed bio-retention swales or basins, we anticipate that bio-swales will be located relatively close to the proposed structures. We recommend a minimum separation of 10 horizontal feet. The bottom of the swales should be sloped away from the structure foundation. In addition, we recommend that a subsurface drain be provided below the select treatment soils at the low side of the swale/basin. The subdrain should be connected to the nearest storm drain catch basin. A 4 inch SDR35 perforated pipe surrounded by Caltrans Class 2 Permeable Material should be provided to discharge collected water into the nearest catch basin. An impermeable liner may also be required in the bottom of the swales. Additional details can be provided when plans are available.

Foundations

Provided that the upper 3 feet of the pad soils are lime treated or constructed with select import as recommended in the "Grading" section above to minimize the effects of the estimated total and differential settlements noted above, the proposed structures may be supported by utilizing a deepened, well-reinforced and inter-connected spread footing foundation system with a thickened slab floor.

A continuous spread footing should be placed around the perimeter of the structure and be a minimum of 18 inches wide. All interior and exterior column footings should be interconnected to the perimeter with reinforced concrete tie-beams. Isolated footings should not be utilized unless connected with reinforced tie-beams or through reinforced slab connections. The continuous and pad/column footings should extend to a minimum depth of 24 inches below the interior slab subgrade soil elevation. The tie beams should extend to a minimum depth of 18 inches below the interior soil pad grade. The recommended design allowable bearing pressure for footings is 2,000 p.s.f. due to dead plus live loads. The allowable pressure may be increased by 1/3 due to all transient loads which include wind and seismic. All foundations must be adequately reinforced to provide structural continuity and resist the anticipated loads as determined by the project Structural Engineer. The final footing design and reinforcement should be determined by the project Structural Engineer. However, continuous footings and tie-beams are recommended to be reinforced with a minimum of four No. 6 bars, two at the top and two near the bottom of the footing. Additional reinforcement will be as required by the structural engineer and in accordance with structural building code requirements. Foundations designed in accordance with the above criteria are expected to experience a total settlement of less than 1.5 of an inch with less than ½ inch of an inch in 50 feet.

To accommodate lateral building loads, the passive resistance of the foundation soil can be utilized. The passive soil pressures can be assumed to act against the front face of the footing below a depth of 1 foot below the ground surface. It is recommended that a passive pressure equivalent to that of a fluid weighing 250 p.c.f. be used. For design purposes, an allowable friction coefficient of 0.32 can be assumed at the base of the spread footings. These two modes of resistance should not be added unless the frictional component is reduced by 50 percent since the mobilization of the passive resistance requires some horizontal movement, effectively reducing the frictional resistance.

Slab-on-Grade Construction

Interior and exterior concrete slabs, including sidewalks, driveways, non-structural detached patios and general flatwork will likely experience some cracking due to finishing, curing methods, drying shrinkage, as well as moisture variations and related soil movements within the underlying clay soils. To reduce the potential cracking of the slabs-on-grade, the following recommendations are made:

a) It is important to moist cure the lime treated soils on the building pad until placement of the subsequent materials. All areas to receive slabs should be thoroughly wetted and soaked to seal any desiccation or shrinkage cracks prior to

placing concrete. This work should be done under the observation of the Soil Engineer.

b) Slabs should be underlain by a minimum of 4 inches of Caltrans Class II Aggregate Base placed and compacted to a minimum of 90% between the finished subgrade and the slabs to serve as subbase support.

c) Interior slabs should be a minimum of 6 inches thick and reinforced with a minimum of No. 4 rebar spaced 16 inches center to center, each way. Exterior pedestrian flatwork and general slabs should be a minimum of 5 inches thick and reinforced with No. 4 rebar spaced at 18 inches on center. The actual slab thickness and reinforcement should be determined by the project Structural Engineer in accordance with the structural requirements and the anticipated loading conditions. The reinforcement shall be placed in the center of the slab unless otherwise designated by the design engineer.

d) A vapor retarder membrane should be installed between the prepared building pad aggregate base and the interior slabs to minimize moisture condensation under the floor coverings and/or upward vapor transmission. The vapor barrier membrane should be a minimum 15-mil extruded polyolefin plastic that complies with ASTM E1745 Class A and have a permeance of less than 0.01 perms per ASTM E96 or ASTM F1249. It is noted that polyethylene films (visqueen) do not meet these specifications. The vapor barrier must be adequately lapped and taped/sealed at penetrations and seems in accordance with ASTM E1643 and the manufacturer's specifications. The vapor retarder must be placed continuously across the slab area.

e) Water vapor migrating to the surface of the concrete can adversely affect floor covering adhesives. Provisions should be provided in the concrete mix design to minimize moisture emissions. This should include the selection of a water-cement ratio which inhibits water permeation (0.45 max) and/or the addition of suitable admixtures to limit water transmission. We also recommend the use of Type I/II cement for additional corrosion resistance.

f) Slabs for driveways, and exterior flatwork should be placed structurally independent of the foundations. Driveway slab recommendations are presented in the "Pavement" section of the report. A 30-pound felt strip, expansion joint material, or other positive separator should be provided around the edge of all floating slabs to prevent bonding to the foundation. However, rebar doweling is

recommended to minimize vertical movements between exterior slabs and building foundations. Doweling details should be determined by the Structural Engineer.

g) To minimize moisture infiltration under exterior slabs and to add edge rigidity, we recommend that slabs be thickened at the edges to extend below the aggregate base layer to the soil subgrade for a minimum width of 6 inches.

h) Slabs should be provided with crack control saw cut joints or tool joints to allow for expansion and contraction of the concrete. In general, contraction joints should be spaced no more than 20 times the slab thickness in each direction. The layout of the joints should be determined by the project Structural Engineer and/or Architect.

i) We recommend that appropriate provisions be provided by the Structural Engineer and Contractor to minimize slab cracking, such as curing measures and/or admixtures to minimize concrete drying-shrinkage and curling. American Concrete Institute methods and guidelines of curing, such as wet curing or membrane curing, are recommended to minimize drying shrinkage cracking.

Retaining Walls

Any retaining walls, including loading docks and elevator pits that are to be incorporated into the project should be designed to resist lateral pressures exerted from a media having an equivalent fluid weight as follows:

Gradient of Back Slope	Equivalent Fluid Weight (p.c.f.)			Coefficient of Friction
	Unrestrained Condition (Active)	Restrained Condition (At Rest)	Passive Resistance	
Horizontal	60	75	250	0.32

It should be noted that the effects of any surcharge or compaction loads behind the walls must be accounted for in the design of the walls. In addition, an earthquake load of $13H^2$ applied at 0.6H where H = wall height, from the bottom of the wall is applicable. Restrained conditions should be used where framing or other structural members rests on top or is connected to the top of walls.

The above criteria are based on fully drained conditions. Groundwater is not expected for the elevator pits and loading docks, however we do recommend water-proofing for elevator pits. In order to achieve fully-drained conditions, a drainage filter blanket should be placed behind the wall. The blanket should be a minimum of 12 inches thick and should extend the full height of the wall. If the excavated area behind the wall exceeds 12 inches, the entire excavated space behind the 12-inch blanket should consist of compacted engineered fill or blanket material. The drainage blanket material may consist of either granular crushed rock or drain pipe fully encapsulated in geotextile filter fabric (Mirafi 140N or equivalent) or Class II permeable material that meets CalTrans Specification, Section 68. A 4-inch diameter SDR35 perforated drain pipe should be installed in the bottom of the drainage blanket and should be underlain by 4 inches of filter type material. Piping with a minimum gradient of 2% shall be provided to discharge water that collects behind the walls to an adequately controlled discharge system away from the structure foundations or to sump pit.

Pavement Areas

The driveways and parking areas will be paved with either asphalt concrete (AC) or Portland cement concrete (PCC) surfaces. Recommendations for these pavement surfaces are presented below. We emphasize that the performance of the pavement is critically dependent upon adequate and uniform compaction of the subgrade soils, as well as engineered fill and utility trench backfill within the limits of pavements. Pavements will typically have poor performance and shorter life where water is allowed to migrate into the aggregate base and subgrade soils. The main sources of water into pavement materials are landscape planters constructed within or adjacent to pavement areas. Where this is planned, it is suggested to extend the curbs into the soil subgrade at least 2 inches. The construction of all pavements should conform to the requirements set forth by the latest Standard Specifications of the Department of Transportation of the State of California (Caltrans) and/or the City of Vacaville.

R-Value: A composite bulk sample was obtained of the near surface soils within the planned parking lot and driveways that is relatively representative of the anticipated subgrade soils. The sample was tested in accordance with the California Test Method 301 to determine the R-Value for the site soils. An R-Value of 8 was determined for the sample as shown in the Appendix. However, we understand that new pavement areas may be constructed during the winter months and will be lime treated. Therefore, an alternate lime treated R-value of 25 is also considered herein.

Preparation of Subgrade: After underground utilities have been placed in the areas to receive pavement and removal of excess material has been completed, the upper 12 inches of the subgrade soil shall be scarified, moisture conditioned and compacted to a minimum relative compaction of 95% at a moisture content at 3% or more above optimum in accordance with the

grading recommendations specified in this report. As recommended in the "Grading" section above, the upper 12 inches of the subgrade may alternatively be lime treated. Prior to placement of aggregate baserock, it is recommended that the subgrade be proof rolled and observed for deflection by the Soils Engineer. Should deflection and/or pumping conditions be encountered, stabilization recommendations will be provided based on field conditions.

Aggregate Base: All aggregate base material placed subsequently should also be compacted to a minimum relative compaction of 95% based on the ASTM Test Procedure D1557. Aggregate base should meet the minimum requirements of Caltrans ¾" Class 2 per Section 26 and be crushed and angular. The recommended aggregate base thicknesses for asphalt concrete pavements are noted in the table below. The minimum aggregate base thickness for Portland cement concrete PCC roadway pavements is 6 compacted inches.

Asphalt Concrete: Asphalt concrete shall conform with Section 39 of Caltrans Standard Specifications and shall be per the City of Vacaville Standards. Based on an R-Value of 8, and traffic indices typical for commercial developments, the recommended pavement sections for asphalt concrete surfaces are summarized in the table below. Should the parking lot soils be lime treated, we are providing an alternate section based on a minimum R-value of 25. The appropriate traffic index (TI) and any minimum pavement sections should be determined by the Civil Engineer in conformance with the City of Vacaville.

Traffic Condition	**Traffic Index (TI)**	**Asphalt Concrete (inches)**	**Class II Aggregate Base[1] (inches)**
Parking Stalls	4.5	3.0 3.0	7.5 5.0*
Drive Aisles	6.5	4.0 3.5	13.0 9.5*

NOTES:
(1) Minimum R-Value = 78
(2) All layers in compacted thickness to CalTrans Standard Specifications.
* Lime Treated Subgrade (R-Value = 25 min)

Portland Cement Concrete: Where PCC pavement areas are utilized, such as for drive isles and truck areas or at trash enclosures, the concrete should be poured on the compacted aggregate base layer described above of 6 inches. The concrete section should be designed by the project Civil or Structural Engineer per Chapter 620 of the Highway Design Manual or City Standards. We recommend a minimum of 6 inches thick PCC reinforced with a minimum of No. 4 rebar spaced at 16 inches on center, each way, underlain by 6 inches of compacted Class 2 aggregate base.

Additional reinforcement may be required by the Structural Engineer. Pavement joints shall be per the HDM and City Standards.

General Construction Requirements

Utility trenches extending underneath all traffic areas must be backfilled with native or import soil materials and compacted to relative compaction of 90% to within 12 inches of the subgrade. The upper 12 inches should be compacted to 95% relative compaction in accordance with Laboratory Test Procedure ASTM D1557. Backfilling and compaction of these trenches must also meet the requirements set forth by the City of Vacaville, Department of Public Works.

Applicable safety standards require that trenches in excess of 5 feet must be properly shored or that the walls of the trench slope back to provide safety for installation of lines. If trench wall sloping is performed, the inclination should vary with the soil type and applicable OSHA Safety Standards. The soils at the site are considered to be Type B, except where groundwater is encountered Type C should be used.

With respect to state-of-the-art construction or local requirements, utility lines are generally bedded with granular materials. These materials can convey surface or subsurface water beneath the structures. It is, therefore, recommended that all utility trenches which possess the potential to transport water be sealed with a compacted impervious cohesive soil material or lean concrete where the trench enters/exits the building perimeter. This impervious seal should extend a minimum of 2 feet away from the building perimeter.

LIMITATIONS AND UNIFORMITY OF CONDITIONS

1. It should be noted that it is the responsibility of the owner or his representative to notify ***KC ENGINEERING CO.***, in writing, a minimum of two working days before any clearing, grading, or foundation excavation operations can commence at the site.

2. The recommendations of this report are based upon the assumption that the soil conditions do not deviate from those disclosed in the borings and from a reconnaissance of the site. Should any variations or undesirable conditions be encountered during the development of the site, ***KC ENGINEERING CO.***, will provide supplemental recommendations as dictated by the field conditions.

3. This report is issued with the understanding that it is the responsibility of the owner, or his representative, to ensure that the information and recommendations contained herein are brought to the attention of the Architect and Engineer for the project and incorporated into the plans and that the necessary steps are taken to see that the Contractor and Subcontractors carry out such recommendations in the field.

4. At the present date, the findings of this report are valid for the property investigated. With the passage of time, significant changes in the conditions of a property can occur due to natural processes or works of man on this or adjacent properties. In addition, legislation or the broadening of knowledge may result in changes in applicable standards. Changes outside of our control may render this report invalid, wholly or partially. Therefore, this report should not be considered valid after a period of two (2) years without our review, nor should it be used, or is it applicable, for any properties other than those investigated.

5. Not withstanding, all the foregoing applicable codes must be adhered to at all times.

APPENDIX

Aerial Vicinity Map

Site Plan

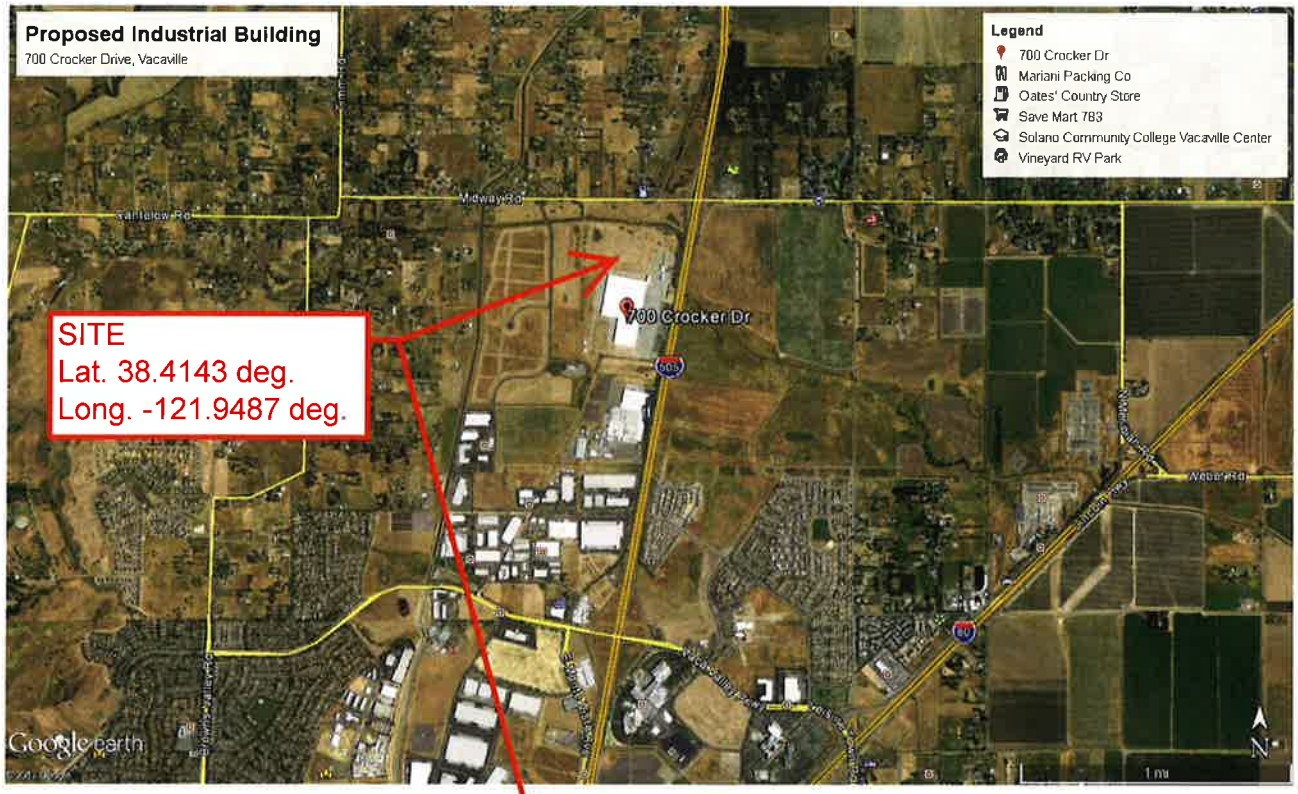
Geologic Map

Boring Logs

Subsurface Exploration Legend

Laboratory Test Results

USGS Seismic Design Report



KC ENGINEERING COMPANY
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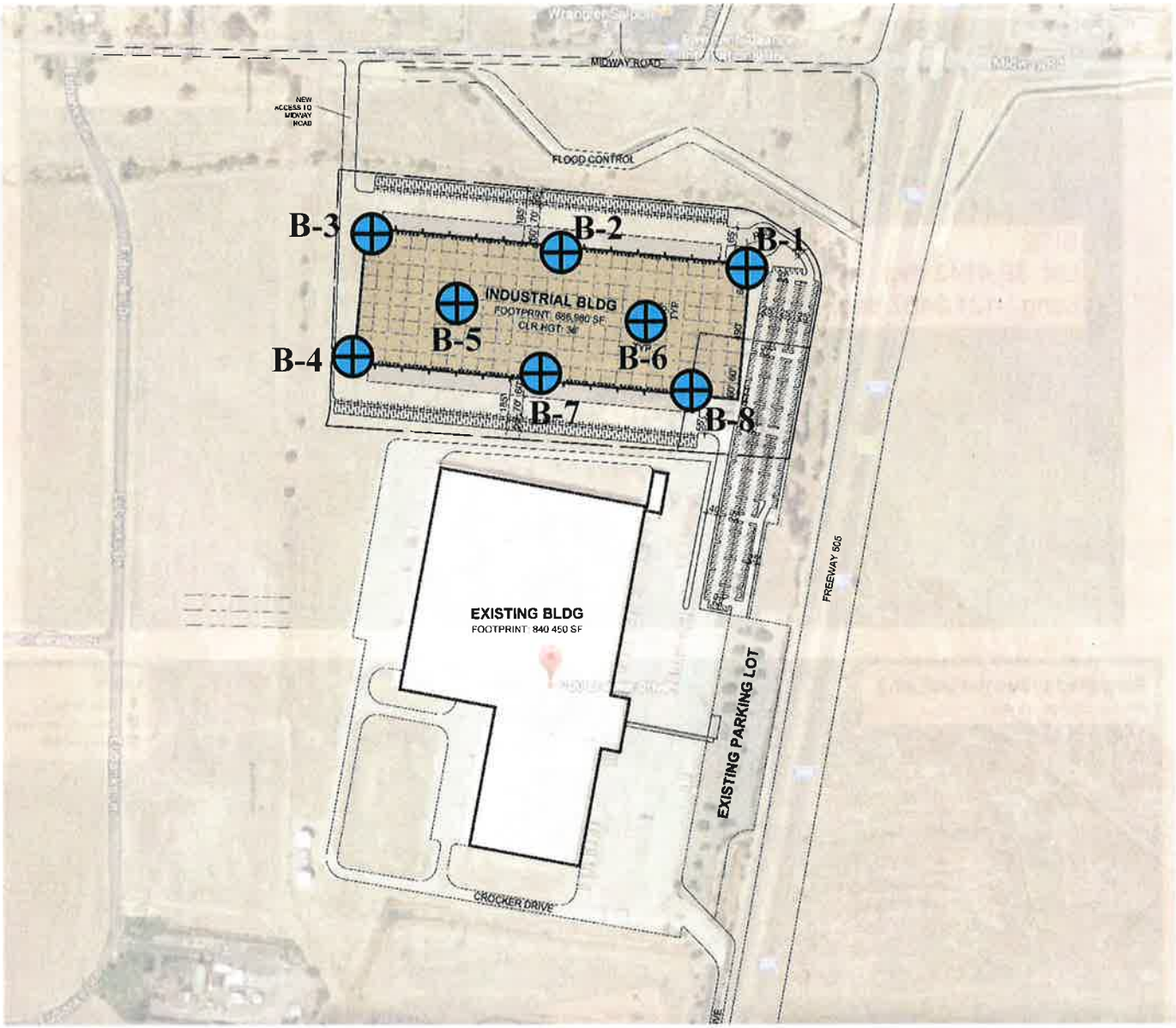
Vacaville, CA 95688
707.447.4025

Project No. VV4376
Proposed Industrial Building
700 Crocker Drive, Vacaville, CA
Figure 1 – AERIAL VICINITY MAP



LEGEND

⊕ **Approximate Boring Location, KCE 2017**

KC ENGINEERING COMPANY
865 Cotting Lane, Suite A
Vacaville, CA 95688
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Project No. VV4376
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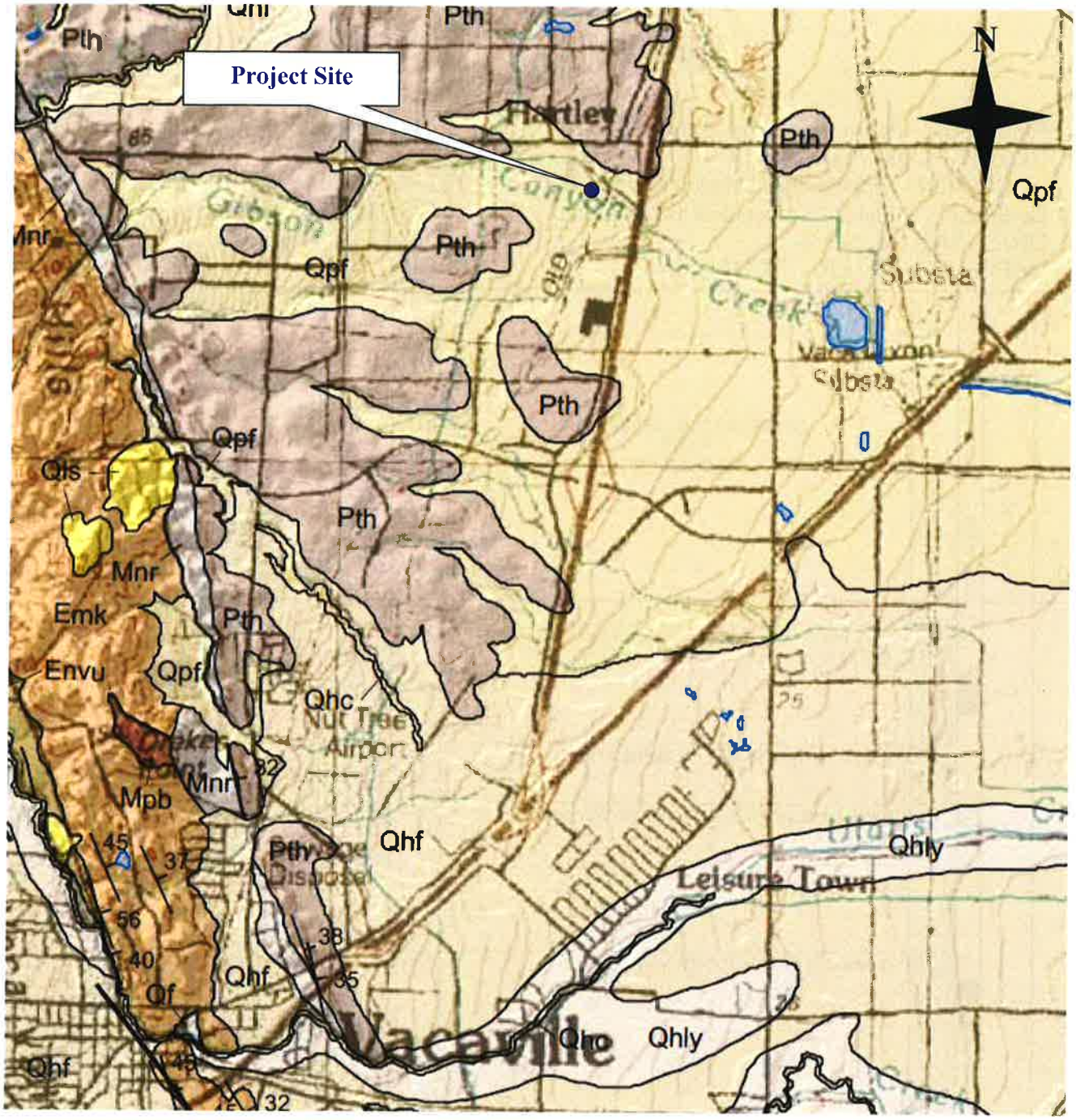
Figure 2 – SITE PLAN



PRELIMINARY GEOLOGIC MAP OF
THE LODI 30' x 60' QUADRANGLE, CALIFORNIA

Compiled by
Timothy E. Dawson
2009

Qpf	Alluvial fan deposits
Pth	Tehama Formation

KC ENGINEERING COMPANY
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Project No. VV4376
Proposed Industrial Building
700 Crocker Drive, Vacaville, CA
Figure 3 – GEOLOGIC MAP

LOG OF TEST BORING
BORING NO.: 1

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/11/17
ELEVATION: n/a
LOGGED BY: DVC
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				Olive Brown Clayey SILT with Some Sand & Gravel; top 12" dry & loose then moist & very stiff. (FILL)	ML					
	1-1	■				23	103.9	6.5	>4.5	<No.200=69%
				Brown Sandy GRAVEL; dry, dense. (FILL?)	GP					
5										
	1-2	■		Yellowish Brown Silty SAND; moist, very dense. (NATIVE)	SM	50-4"	93.7	18.4		
10										
				Brown Clayey SAND, moist; very dense.	SC					
	1-3	■				59				
15										
				Mottled Gray & Brown Clayey SAND; moist, dense.	SC					
	1-4	■				42	103.9	23.0		
20				Boring Terminated @ 20'. No Groundwater Encountered.						
25										

This information pertains only to this boring and is not necessarily indicitive of the whole site.

KC ENGINEERING CO.

Figure 4

LOG OF TEST BORING
BORING NO.: 2

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/11/17
ELEVATION: n/a
LOGGED BY: DVC
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				Dark Brown Silty CLAY; moist, top 12" loose then firm.	CL/ CH					
				Brown Clayey SILT with Sand; moist, firm to stiff.	ML					
	2-1					8	115.4	10.6	2.0	ϕ=23° c=447 psf
5										
				Gravels @ 7 to 7.5'	GP					
				Mottled Gray & Brown Sandy CLAY; moist, hard.	CL					
	2-2					36	103.3	23.5	>4.5	
10										
				Mottled Brown Clayey SAND; moist, very dense.	SC					
	2-3					55	113.1	16.0	>4.5	
15				Boring Terminated @ 15'. No Groundwater Encountered.						
20										
25										

This information pertains only to this boring and is not necessarily indicitive of the whole site.

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Figure 5

LOG OF TEST BORING
BORING NO.: 3

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/11/17
ELEVATION: n/a
LOGGED BY: DVC
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				Brown Sandy CLAY with Some Gravel; dry, loose (top 12") then very stiff. (FILL?)	CH					
	3-1	■		Light Brown Sandy SILT; moist, hard.	ML	33	106.9	6.2	>4.5	LL=60 PI=41 UCC=5,829 psf
5	3-2	■				55	119.3	12.7	>4.5	
				Gravel	GP					
10	3-3	■		Mottled Gray & Brown Fine Sandy CLAY; moist, very stiff.	CL	26	102.6	24.3	3.5	<No.200=85%
15				Brown Clayey SAND; moist, dense.	SC					
				Brown Silty SAND; moist, very dense.	SM					
20	3-4	■				50-6"				
				Boring Terminated @ 20.5'. No Groundwater Encountered.						
25										

This information pertains only to this boring and is not necessarily indicitive of the whole site.

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Figure 6

LOG OF TEST BORING
BORING NO.: 4

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/11/17
ELEVATION:
LOGGED BY: DVC
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				Brown Fine Sandy CLAY; dry & loose (top 12"), then moist & stiff.	CL					
	4-1	■				11	113.1	15.7	1.25	LL=30 PI=16 UCC=1,906 psf
5				Mottled Brown Clayey SAND; moist, very dense.	SC					
	4-2	■				50-5"				
10										
	4-3	■		Mottled Gray & Yellowish Brown Sandy SILT; moist, hard.	ML	63	82.5	16.6	>4.5	
15										
20										
	4-4	■		Mottled Gray & Yellow Sandy CLAY; moist, hard.	SC	59	107.4	21.1		
25				Boring Terminated @ 25'. No Groundwater Encountered.						

This information pertains only to this boring and is not necessarily indicitive of the whole site.

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Figure 7

LOG OF TEST BORING
BORING NO.: 5

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/11/17
ELEVATION: n/a
LOGGED BY: DVC
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				Gray SILT with Gravel; dry & loose (top 12") then moist & stiff.	ML					
	5-1			Dark Brown Sandy CLAY; moist, stiff.	CL	9	101.5	16.4	2.0	LL=38 PI=23
5				Mottled Brown Sandy CLAY with some Gravel; moist, medium dense.	CL					
	5-2					16	114.3	16.2	3.5	
10										
	5-3			Mottled Brown Sandy CLAY; moist, medium dense.	CL	26	104.1	22.9	3.5	
15				Mottled Gray & Yellowish Brown Sandy SILT; moist, hard.	ML					
	5-4					63			>4.5	
20				Boring Terminated @ 20'. No Groundwater Encountered.						
25										

This information pertains only to this boring and is not necessarily indicitive of the whole site.

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Figure 8

LOG OF TEST BORING
BORING NO.: 6

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/11/17
ELEVATION:
LOGGED BY: DVC
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				Brownish Gray Clayey SILT with Some Gravel, dry & loose (top 12"), then moist & stiff.	ML					
	6-1			Brown Sandy CLAY with Some Gravel, moist, medium dense.	CL	25	16.4	111.9		<No.200=67%
5										
	6-2			Brown Sandy CLAY with Fine Gravel, moist, hard.	CL	43	118.1	11.4		
10				Pale Brown Gray Sandy SILT, moist, very hard.	ML					
	6-3									
15				Boring Terminated @ 15'. No Groundwater Encountered.						
20										
25										

This information pertains only to this boring and is not necessarily indicitive of the whole site.

KC ENGINEERING CO.

Figure 9

LOG OF TEST BORING
BORING NO.: 7

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/12/17
ELEVATION: n/a
LOGGED BY: ALK
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				(Disked) Dark Brown Sandy CLAY; dry, loose.	CL					
	7-1	■		Light Brown Clayey SAND; moist, medium dense.	SC	20	117.7	12.1	4.0	<No.200=39%
5	7-2	■		As Above.		9	106.4	15.6	2.25	UCC=1,038 psf
				Light Brown CLAY with Sand; moist, stiff.	CL					
				Reddish Brown Sandy CLAY; moist to wet, hard.	CL					
10	7-3	■				36	121.4	15.0	3.0	
				Mottled Orange & Gray Sandy CLAY; moist, hard.	CL					
15	7-4	■				38	106.4	22.7		
20	7-5	■		As Above.		39			>4.5	
				Boring Terminated @ 21.5'. No Groundwater Encountered.						
25										

This information pertains only to this boring and is not necessarily indicitive of the whole site.

KC ENGINEERING CO.

Figure 10

LOG OF TEST BORING
BORING NO.: 8

PROJECT: Proposed Industrial Building
CLIENT: LDK Ventures, LLC
LOCATION: 700 Crocker Drive, Vacaville, CA
DRILLER: Hillside Geotechnical Drilling, Inc.
DRILL RIG: Mobile B-24
DEPTH TO WATER: INITIAL ▽ :

PROJECT NO.: VV4376
DATE: 10/12/17
ELEVATION: n/a
LOGGED BY: ALK
BORING DIAMETER: 4"
FINAL ▼ : AFTER: hrs.

DEPTH	SAMPLE NO.	SAMPLER	GRAPHIC LOG	GEOTECHNICAL DESCRIPTION AND CLASSIFICATION	SOIL CLASSIFICATION	CONVERTED SPT BLOW COUNT (BLOWS/FT.)	DRY DENSITY (PCF)	MOISTURE CONTENT (PERCENT)	Qp (t.s.f.) Penetrometer	ADDITIONAL TESTS AND REMARKS (LL, PI, UCC, ø&c, Gradation)
0				(Disked w/ Concrete Debris) Dark Brown Sandy SILT with Gravel; dry, loose. (FILL)	ML					
	8-1	■				8	100.5	9.7	1.5	
				Brown Sandy CLAY; moist, very stiff .(NATIVE)	CL					
5	8-2	■				28	112.1	17.9		
				Mottled Brown & Gray Sandy CLAY; moist, very stiff.	CL					
10	8-3	■		Reddish Brown Clayey Coarse SAND; moist to wet, dense.	SC	30	107.0	16.2		
15	8-4	■				42				
				Mottled Brown & Gray Clayey Fine SAND; moist, dense.	SC					
				Mottled Brown & Gray Fine Sandy CLAY; moist, hard.	CL					
20	8-5	■				52				
				Boring Terminated @ 21.5'. No Groundwater Encountered.						
25										

This information pertains only to this boring and is not necessarily indicitive of the whole site.

KC ENGINEERING CO.

Figure 11

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than half of material is retained on the No. 200 Sieve	GRAVEL More than half of coarse fraction is larger than No. 4 sieve	Clean gravels (<5% fines)	GW	Well graded gravels, gravel-sand mixtures, little or no fines (Cu>4 & 1<Cc<3)
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines (Cu < 4 and/or 1>Cc>3)
		Gravel with fines (>12% fines)	GM	Silty gravels and gravel-sand-silt mixtures (PI<4 or below "A" line)
			GC	Clayey gravels and gravel-sand-clay mixtures (PI>7 & on or above "A" line)
	SAND Half or more of the coarse fraction is smaller than No. 4 sieve	Clean sands (<5% fines)	SW	Well graded sands, gravelly sands, little or no fines (Cu>6 & 1<Cc<3)
			SP	Poorly graded sands, gravelly sands, little or no fines (Cu<6 and/or 1>Cc>3)
		Sand with fines (>12% fines)	SM	Silty sands and gravel-sand-silt mixtures (PI<4 or below "A" line)
			SC	Clayey sands and gravel-sand-clay mixtures (PI>7 & on or above "A" line)
FINE GRAINED SOILS Half or more of the material passes the No. 200 Sieve	SILTS AND CLAYS Liquid Limit is less than 50%		ML	Inorganic silts with gravel and sand having slight plasticity (PI<4 or below "A" line)
			CL	Inorganic clays of low to med. plasticity with gravel and sand (PI>7 & on or above "A" line)
			OL	Organic silts and clays of low plasticity
	SILTS AND CLAYS Liquid Limit is 50% or more		MH	Inorganic elastic silts (PI below "A" line)
			CH	Inorganic clays of high plasticity, fat clays (PI on or above "A" line)
			OH	Organic silts and clays of medium to high plasticity
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils

MTI-KC ENGINEERING COMPANY
865 Cotting Lane, Ste A, Vacaville, CA 95688
8798 Airport Road, Redding, CA 96002

SAMPLER AND LAB TESTING LEGEND

- Auger
- Bulk Sample, taken from auger cuttings
- California Sampler
- Bulk/Grab Sample
- Pitcher
- Standard Penetration Test
- Shelby Tube
- No Recovery

LL=Liquid Limit (%)
PI=Plasticity Index
¦ =Friction Angle
C=Cohesion
UCC=Unconfined Compression
R value=Resistance Value
Consol=Consolidation Test

SOIL GRAIN SIZE

U.S. STANDARD SIEVE OPENINGS

CLAY	SILT	SAND			GRAVEL		COBBLES	BOULDERS
		FINE	MEDIUM	COARSE	FINE	COARSE		

#200 (0.075), #40 (0.425), #10 (2.00), #4 (4.75), ¾" (19.0), 3" (75), 12" (300); CLAY 0.002

SOIL GRAIN SIZE IN MILLIMETERS

RELATIVE DENSITY (Coarse-grained soils)

SANDS & GRAVELS	BLOWS/FOOT[1]
Very Loose	0 – 4
Loose	4 – 10
Medium Dense	10 – 30
Dense	30 – 50
Very Dense	> 50

CONSISTENCY (Fine-grained soils)

SILTS & CLAYS	STRENGTH[2]	BLOWS/FOOT[1]
Very Soft	< 500	0 – 2
Soft	500 – 1,000	2 – 4
Firm	1,000 – 2,000	4 – 8
Stiff	2,000 – 4,000	8 – 15
Very Stiff	4,000 – 8,000	15 – 30
Hard	> 8,000	>30

1 – Number of blows of 140 pound hammer falling 30 inches to drive a 2-inch O.D. split spoon sampler (ASTM D1586)
2 – Unconfined compressive strength in lb/ft^2 as determined by lab testing or approximated by the standard penetration test (ASTM D1586) or pocket penetrometer.

WEATHERING (Bedrock)

Fresh	No visible sign of decomposition or discoloration; rings under hammer impact
Slightly weathered	Slight discoloration inwards from open fractures; little or no effect on normal cementation; otherwise similar to Fresh
Moderately weathered	Discoloration throughout; weaker minerals decomposed; strength somewhat less than fresh rock but cores can not be broken by hand or scraped with knife; texture preserved; cementation little to not affected; fractures may contain filling
Highly weathered	Most minerals somewhat decomposed; specimens can be broken by hand with effort or shaved with knife; texture becoming indistinct but fabric preserved; faint fractures
Completely weathered	Minerals decomposed to soil but fabric and structure preserved; specimens can be easily crumbled or penetrated

STRENGTH (Bedrock)

Plastic	Very low strength
Friable	Crumbles easily by rubbing with fingers
Weak	An unfractured specimen will crumble under light hammer blows
Moderately strong	Specimen will withstand a few heavy hammer blows before breaking
Strong	Specimen will withstand a few heavy ringing blows and will yield with difficulty only dust and small flying fragments
Very strong	Specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments

BEDDING (Bedrock)	SPACING (inches)
Very thickly bedded	> 48
Thickly bedded	24 to 48
Thin bedded	2.5 to 24
Very thin bedded	5/8 to 2.5
Laminated	1/8 to 5/8
Thinly laminated	<1/8

FRACTURING (Bedrock)	SPACING (inches)
Very little fractured	> 48
Occasionally fractured	12 to 48
Moderately fractured	6 to 12
Closely fractured	1 to 6
Intensely fractured	5/8 to 1
Crushed	<5/8

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(707) 447-4025, fax 447-4143

Client: LDK Ventures, LLC
3140 Peacemaker Way
McClellan, CA 95652

Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California

Client No.: VV4376-001
Report No.: 0300-001
Date: 11/02/17

Submitted by: KC Engineering

Density of Soil in Place by the Drive-Cylinder Method (ASTM D2937) and Liquid Limit, Plastic Limit & Plasticity Index of Soils (ASTM D4318)

Sample #	Description	Dry Density p.c.f.	Moisture Content %	Liquid Limit	Plastic Limit	Plastic Index
1-1 @ 2.0'	Grayish Brown Sandy Silt (visual)	103.9	6.5	---	---	---
1-2 @ 7.0'	Yellowish Brown Silty Sand (visual)	93.7	18.4	---	---	---
1-4 @ 19.0'	Mottled Olive Yellow & Orange Clayey Sand (visual)	103.9	23.0	---	---	---
2-1 @ 4.0'	Brown Clayey Silt with Sand (visual)	115.4	10.6	---	---	---
2-2 @ 9.0'	Yellow Brown Sandy Clay (visual)	103.3	23.5	---	---	---
2-3 @ 14.0'	Mottled Brown, Orange & Yellow Clayey Sand (visual)	113.1	16.0	---	---	---
3-1 @ 2.0'	Brown Sandy Silt (visual)	106.9	6.2	---	---	---
3-1B @ 2.0'	Brown Sandy Clay (visual)	---	---	60	19	41
3-2 @ 5.0'	Brown Sandy Silt (visual)	119.3	12.7	---	---	---
3-3 @ 10.0'	Yellowish Brown Sandy Clay (visual)	102.6	24.3	---	---	---
4-1 @ 3.0'	Dark Brown Sandy Clay with Gravel (visual)	113.1	15.7	30	14	16
4-3 @ 14.5'	Mottled Yellow, Gray & Brown Sandy Silt (visual)	82.5	16.6	---	---	---
4-4 @ 24.5'	Mottled Gray & Yellow Sandy Clay (visual)	107.4	21.1	---	---	---
5-1 @ 2.5'	Dark Brown Sandy Clay (visual)	101.5	16.4	38	15	23
5-2 @ 7.5'	Brown Sandy Clay (visual)	114.3	16.2	---	---	---

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700 Crocker Drive, Vacaville, California

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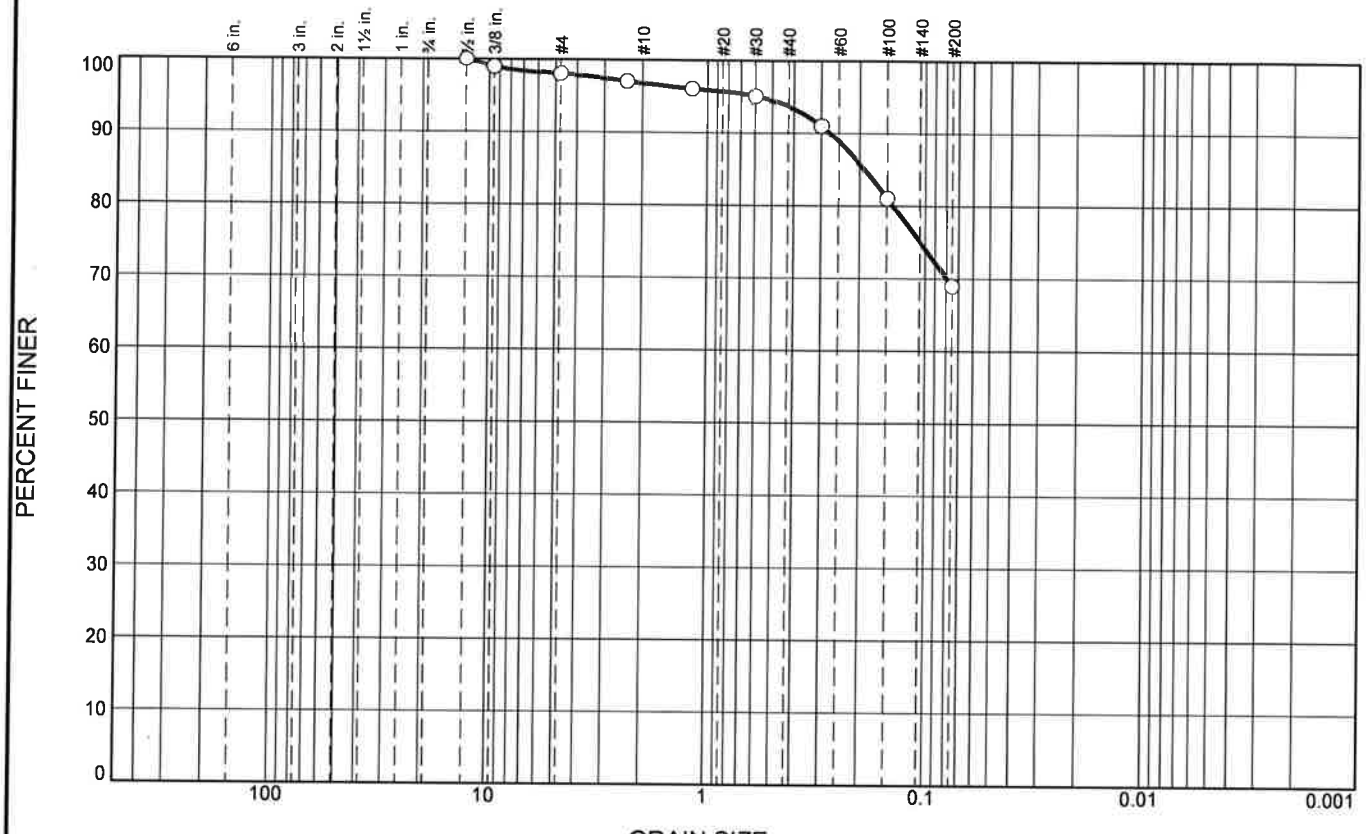
Density of Soil in Place by the Drive-Cylinder Method (ASTM D2937) and Liquid Limit, Plastic Limit & Plasticity Index of Soils (ASTM D4318)

Sample #	Description	Dry Density p.c.f.	Moisture Content %	Liquid Limit	Plastic Limit	Plastic Index
5-3 @ 13.0'	Mottled Gray, Brown & Yellow Sandy Clay (visual)	104.1	22.9	---	---	---
6-1 @ 4.0'	Brown Sandy Clay (visual)	111.9	16.4	---	---	---
6-2 @ 9.0'	Brown Sandy Clay with Gravel (visual)	118.1	11.4	---	---	---
7-1 @ 2.0'	Brown Clayey Sand (visual)	117.7	12.1	---	---	---
7-2 @ 6.0'	Light Brown Clayey Sand (visual)	106.4	15.6	---	---	---
7-3 @ 11.0'	Brown Sandy Clay (visual)	121.4	15.0	---	---	---
7-4 @ 16.0'	Mottled Yellow, Brown & Gray Sandy Clay (visual)	106.4	22.7	---	---	---
8-1 @ 3.5'	Brown Sandy Silt with Gravel (visual)	100.5	9.7	---	---	---
8-2 @ 6.0'	Brown Sandy Clay (visual)	112.1	17.9	---	---	---
8-3 @ 11.0'	Brown Clayey Sand (visual)	107.0	16.2	---	---	---
Pad/Subgrade 0-4.0' Bulk	Brown Sandy Clay (visual)	---	---	36	15	21

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	2	1	3	25	69	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
1/2"	100		
3/8"	99		
#4	98		
#8	97		
#16	96		
#30	95		
#50	91		
#100	81		
#200	69		

* (no specification provided)

Material Description

Grayish Brown Sandy Silt (visual)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.2740 D_{85}= 0.1915 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO=

Remarks

Material tested in accordance with ASTM D6913.

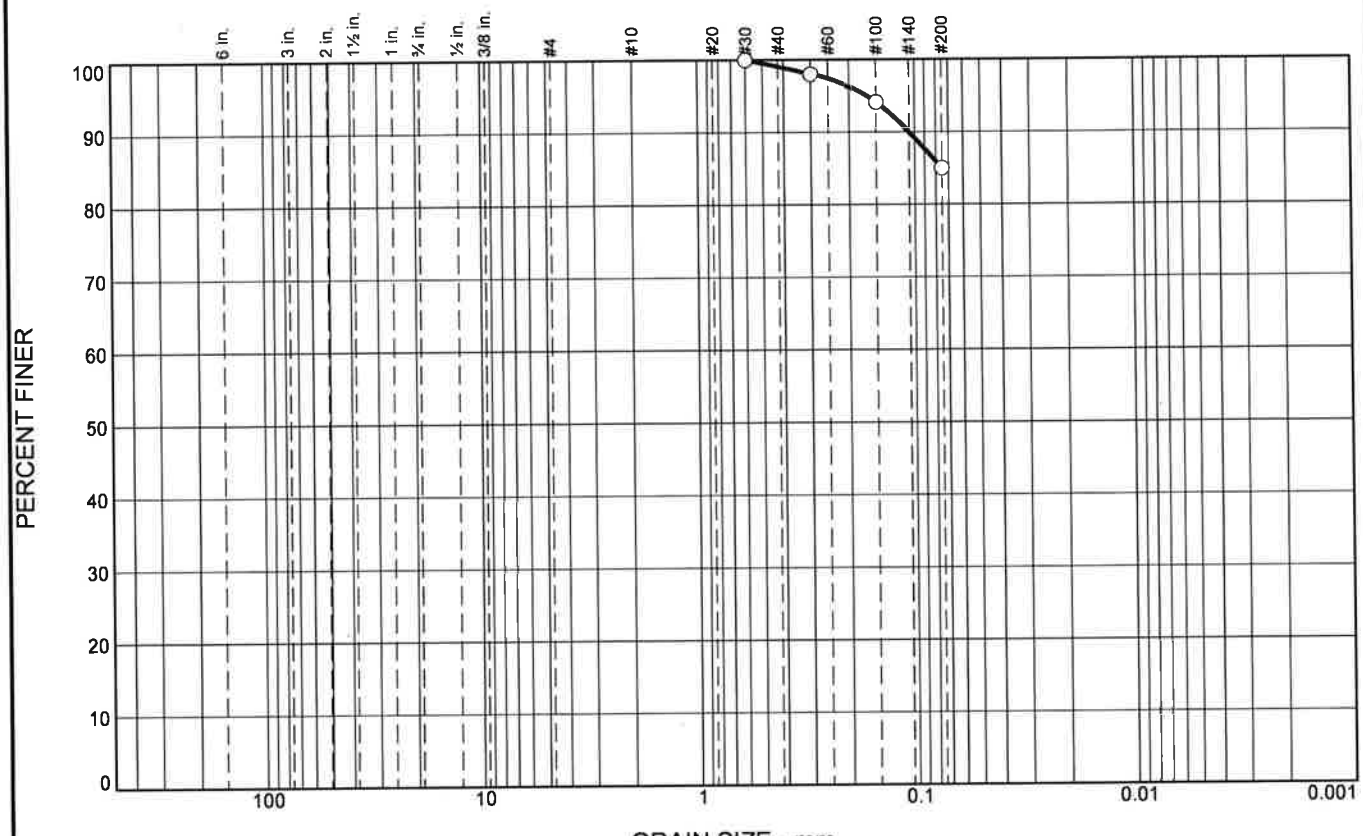
Location: 1-1
Sample Number: 4 **Depth:** 2.0'

Date: 11/02/17

Materials Testing, Inc.

Client: LDK Ventures, LLC
Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California
Project No: VV4371-001 **Figure** 0300-002

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	1	14	85	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#30	100		
#50	98		
#100	94		
#200	85		

* (no specification provided)

Material Description

Yellowish Brown Sandy Clay (visual)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.1065 D_{85}= 0.0750 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

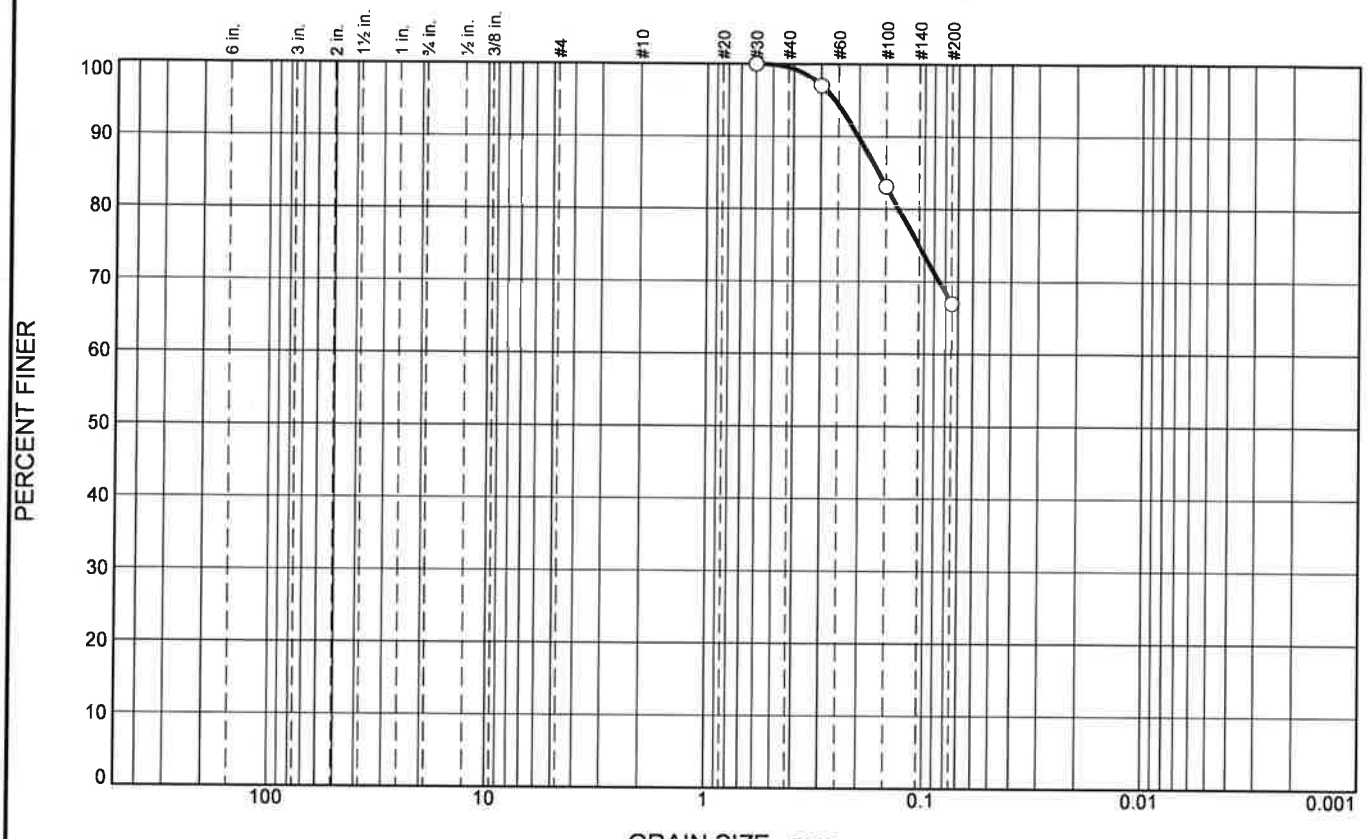
Material tested in accordance with ASTM D6913.

Location: 3-3
Sample Number: 11 **Depth:** 10.0' **Date:** 11/02/17

Materials Testing, Inc.

Client: LDK Ventures, LLC
Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California
Project No: VV4371-001 **Figure** 0300-003

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	0	33	67	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#30	100		
#50	97		
#100	83		
#200	67		

* (no specification provided)

Material Description

Brown Sandy Clay (visual)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.2028 D_{85}= 0.1632 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO=

Remarks

Material tested in accordance with ASTM D6913.

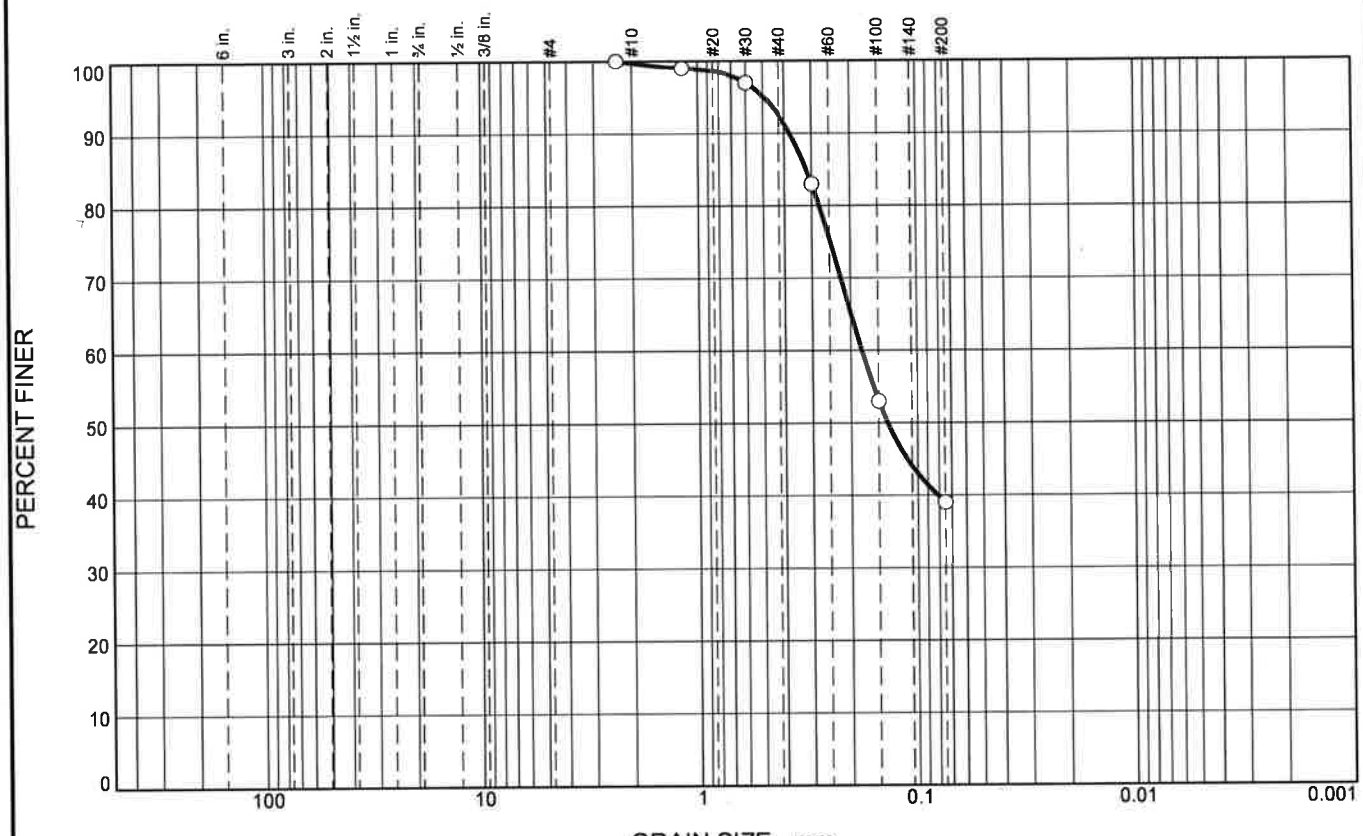
Location: 6-1
Sample Number: 21 **Depth:** 4.0'

Date: 11/02/17

Materials Testing, Inc.

Client: LDK Ventures, LLC
Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California
Project No: VV4371-001 **Figure** 0300-004

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0	0	0	0	7	54	39	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#8	100		
#16	99		
#30	97		
#50	83		
#100	53		
#200	39		

* (no specification provided)

Material Description

Brown Clayey Sand (visual)

Atterberg Limits

PL= LL= PI=

Coefficients

D_{90}= 0.3779 D_{85}= 0.3176 D_{60}= 0.1787
D_{50}= 0.1367 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO=

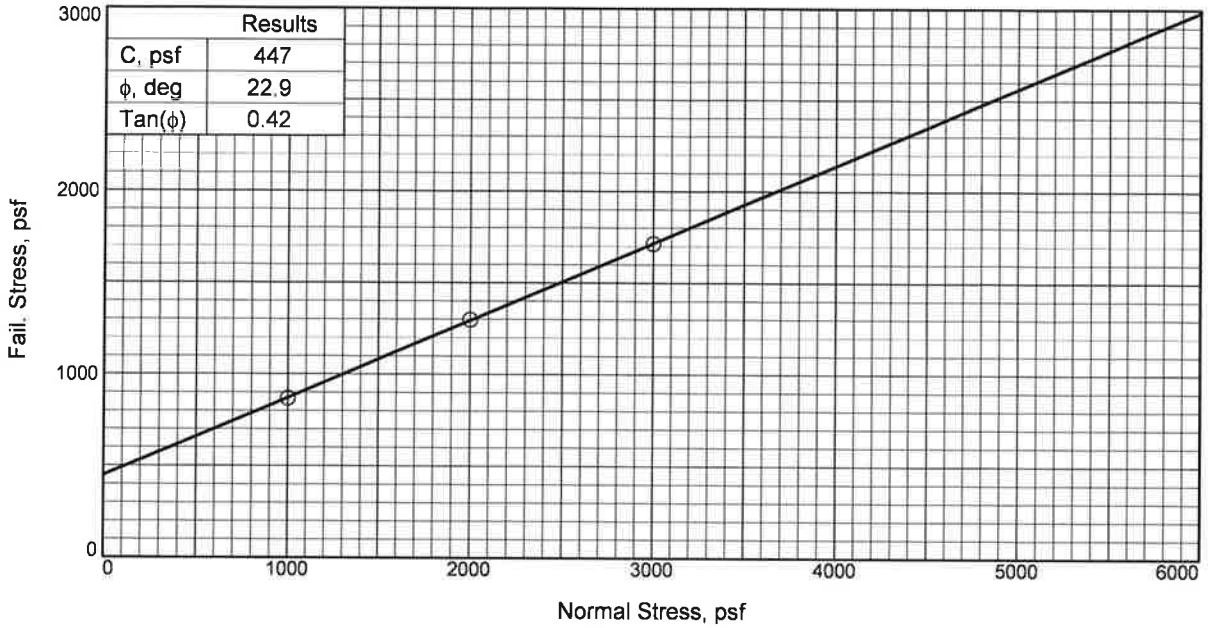
Remarks

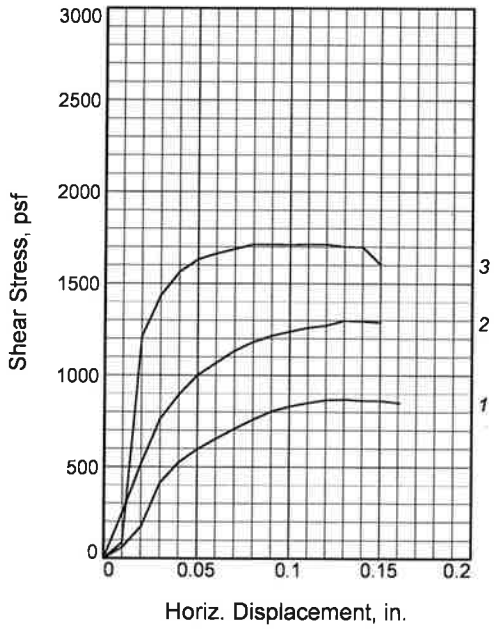
Material tested in accordance with ASTM D6913.

Location: 7-1
Sample Number: 24 **Depth:** 2.0' **Date:** 11/02/17

Materials Testing, Inc.

Client: LDK Ventures, LLC
Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California
Project No: VV4371-001 **Figure** 0300-005





Sample No.		1	2	3
Initial	Water Content, %	10.6	10.6	10.6
	Dry Density, pcf	94.2	116.1	136.0
	Saturation, %	39.4	73.6	162.1
	Void Ratio	0.6836	0.3657	0.1662
	Diameter, in.	2.41	2.41	2.41
	Height, in.	1.00	1.00	1.00
At Test	Water Content, %	16.8	21.8	22.2
	Dry Density, pcf	87.5	109.0	127.3
	Saturation, %	52.5	122.0	229.4
	Void Ratio	0.8127	0.4544	0.2459
	Diameter, in.	2.41	2.41	2.41
	Height, in.	1.08	1.06	1.07
Normal Stress, psf		1000	2000	3000
Fail. Stress, psf		868	1297	1714
Displacement, in.		0.13	0.13	0.08
Ult. Stress, psf				
Displacement, in.				
Strain rate, in./min.		0.002	0.002	0.002

Sample Type: Tube
Description: Brown Clayey Silt with Sand (visual)

Specific Gravity= 2.54
Remarks: DIRECT SHEAR TEST REPORT
Material tested in accordance with ASTM D3080.

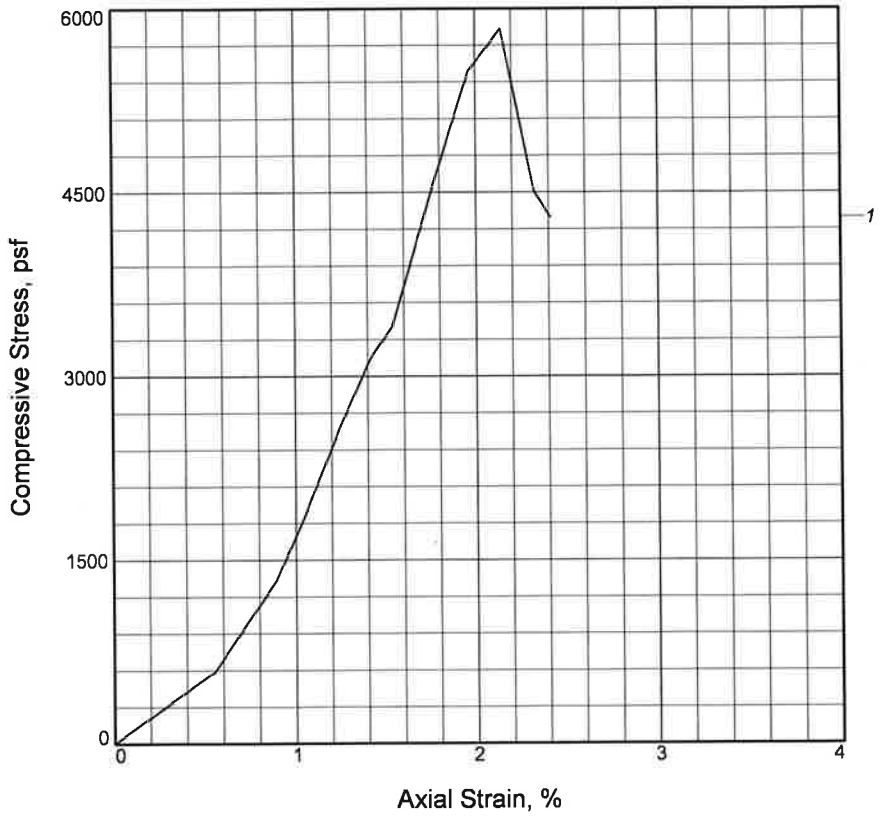
Figure 0300-006

Client: LDK Ventures, LLC

Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California
Location: 2-1
Sample Number: 5 **Depth:** 4.0'
Proj. No.: VV4371-001 **Date Sampled:** 10/12/17

Materials Testing, Inc.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	5829			
Undrained shear strength, psf	2915			
Failure strain, %	2.1			
Strain rate, in./min.	N/A			
Water content, %	6.2			
Wet density, pcf	113.5			
Dry density, pcf	106.9			
Saturation, %	29.6			
Void ratio	0.5596			
Specimen diameter, in.	2.41			
Specimen height, in.	5.60			
Height/diameter ratio	2.32			

Description: Brown Sandy Silt (visual)

LL =	**PL =**	**PI =**	**GS=** 2.67	**Type:** Tube

Project No.: VV4371-001

Date Sampled: 10/12/17

Remarks:
Material tested in accordance with ASTM D2166.
Type of Failure - Cone & Split

Figure 0300-007

Client: LDK Ventures, LLC

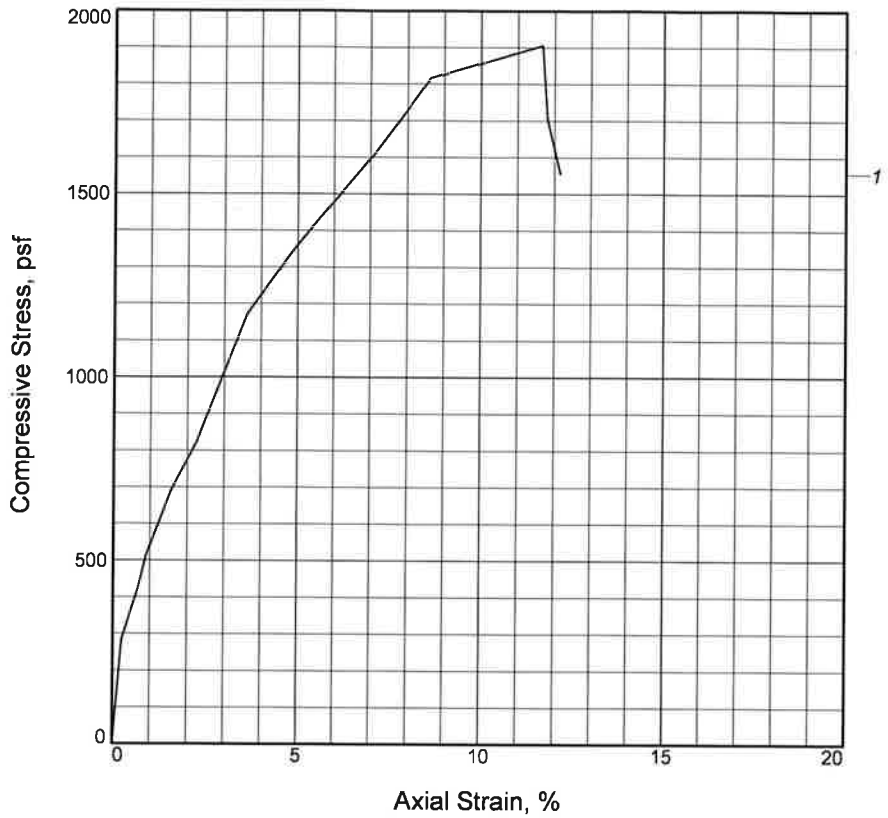
Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California

Location: 3-1

Sample Number: 8 **Depth:** 2.0'

Materials Testing, Inc.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1906			
Undrained shear strength, psf	953			
Failure strain, %	11.7			
Strain rate, in./min.	N/A			
Water content, %	15.7			
Wet density, pcf	130.9			
Dry density, pcf	113.1			
Saturation, %	93.0			
Void ratio	0.4403			
Specimen diameter, in.	2.41			
Specimen height, in.	5.10			
Height/diameter ratio	2.12			

Description: Dark Brown Sandy Clay with Gravel (visual)

LL = 30	**PL =** 16	**PI =** 14	**GS=** 2.61	**Type:** Tube

Project No.: VV4371-001
Date Sampled: 10/12/17

Remarks:
Material tested in accordance with ASTM D2166.
Type of Failure - Bulge & Columnar.

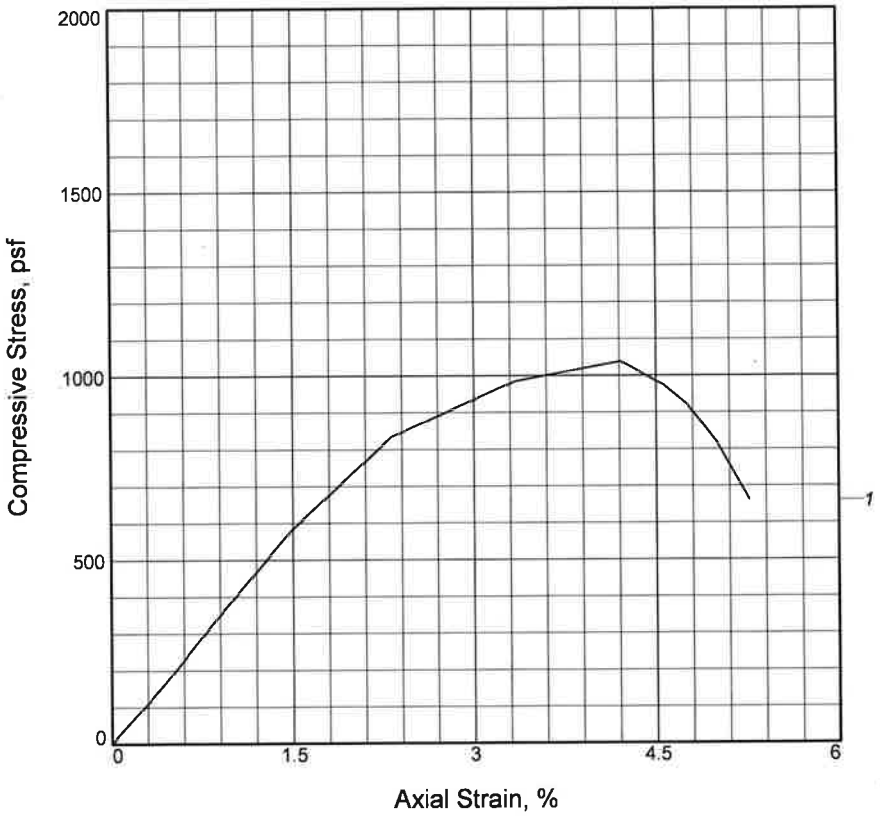
Figure 0300-008

Client: LDK Ventures, LLC

Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California
Location: 4-1
Sample Number: 13 **Depth:** 3.0'

Materials Testing, Inc.

UNCONFINED COMPRESSION TEST



Sample No.	1			
Unconfined strength, psf	1038			
Undrained shear strength, psf	519			
Failure strain, %	4.2			
Strain rate, in./min.	N/A			
Water content, %	15.6			
Wet density, pcf	122.9			
Dry density, pcf	106.4			
Saturation, %	77.6			
Void ratio	0.5202			
Specimen diameter, in.	2.41			
Specimen height, in.	5.70			
Height/diameter ratio	2.37			

Description: Light Brown Clayey Sand (visual)

LL =	**PL =**	**PI =**	**GS=** 2.59	**Type:** Tube

Project No.: VV4371-001

Date Sampled: 10/12/17

Remarks:
Material tested in accordance with ASTM D2166.
Type of Failure - Columnar

Figure 0300-009

Client: LDK Ventures, LLC

Project: Proposed Industrial Building
700 Crocker Drive, Vacaville, California

Location: 7-2

Sample Number: 25 **Depth:** 6.0'

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Client	LDK Ventures, LLC 3140 Peacemaker Way McClellan, CA 95652	**Client No.** **Report No.** **Date:**	VV4376-001 0300-010 11/02/17
Project:	Proposed Industrial Building 700 Crocker Drive, Vacaville, California	**Submitted By:** **Submitted Date:**	KC Engineering 10/16/17

EXPANSION INDEX
(ASTM D4829)

Sample #:	Pad/Subgrade, 0-4.0' Bulk
Soil Description:	Brown Sandy Clay (visual)
Initial Moisture Content (%):	10.5
Moisture Content after Test (%):	21.4
Initial Dry Density (lb/ft^3):	108.6
After Test Wet Density (lb/ft^3):	131.9
Degree of Saturation (%):	51.9
Expansion Index:	42

Table 1 Classification of Potential Expansion of Soils Using EI (ASTM D4829-11)

Expansion Index, EI	Potential Expansion
0 - 20	Very Low
21 – 50	Low
51 – 90	Medium
91 – 130	High
>130	Very High

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Vacaville, California 95688
(707) 447-4025, fax 447-4143

Client:	LDK Ventures, LLC 3140 Peacemaker Way McClellan, CA 95652	**Client No:** **Report No:** **Date:**	VV4376-001 0300-011 11/02/17
Subject:	Proposed Industrial Building 700 Crocker Drive, Vacaville, California	**Submitted By:**	KC Engineering

"R" VALUE TEST REPORT
(CTM 301)

Sample:	35
Description:	Brown Sandy Clay (visual)
Location:	Pad/Subgrade 0-4.0' Bulk

SIEVE ANALYSIS

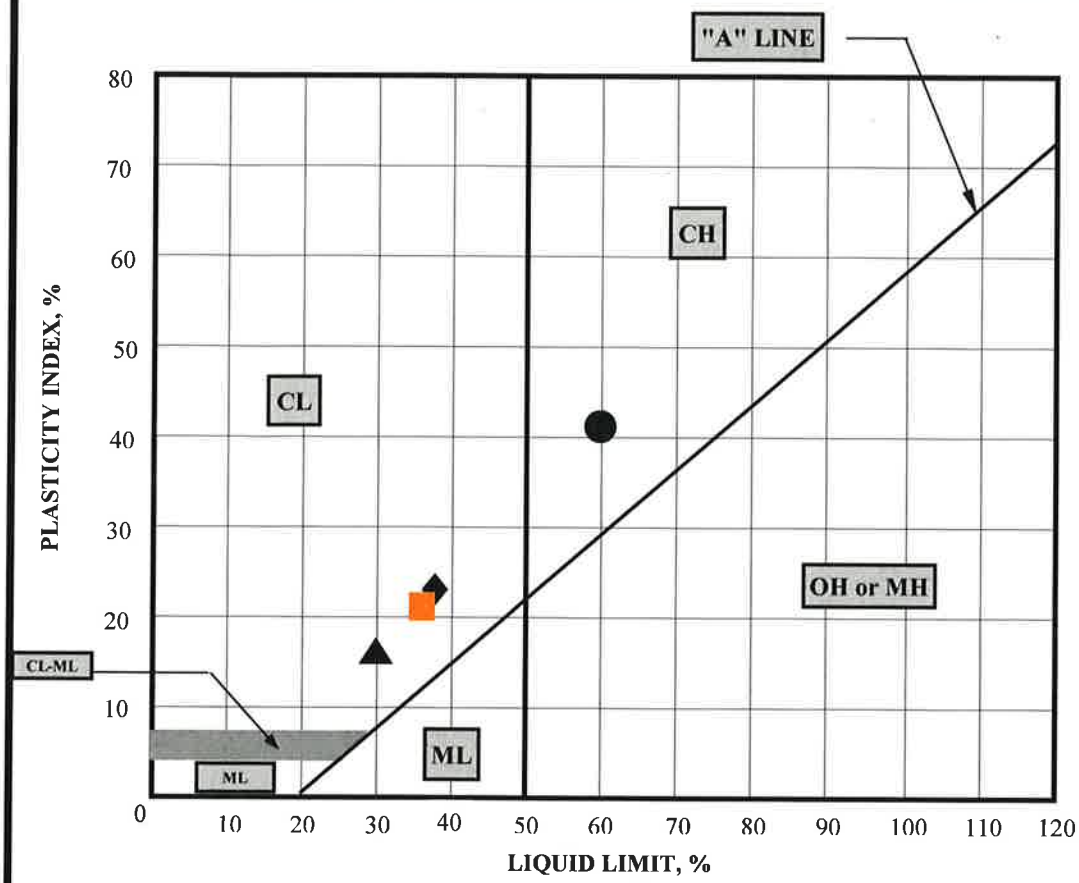
Sieve Size	1"	3/4"	1/2"	3/8"	#4
"As Received" (Percent Pass)	---	---	---	---	100
"As Used" (Percent Pass)	---	---	---	---	100

RESISTANCE VALUE

Specimen Number	Dry Unit Weight, PCF	Moisture (%)	Exudation Pressure (PSI)	Expansion Pressure Dial Reading & PSF		R-Value
1	115.1	14.7	443	16	69	20
2	111.3	17.2	377	11	48	10
3	105.2	19.1	258	5	22	8

R-Value @ 300 PSI Exudation Pressure = 8

Notes:



KEY SYMBOL	SAMPLE NUMBER	DEPTH	NATURAL MOISTURE CONTENT, %	LIQUID LIMIT, LL, %	PLASTIC LIMIT, PL, %	PLASTICITY INDEX, PI, %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
●	3-1B	2.0'	N/A	60	19	41	N/A	CH
▲	4-1	3.0'	N/A	30	14	16	N/A	CL
◆	5-1	2.5'	N/A	38	15	23	N/A	CL
■	35	Subgrade	N/A	36	15	21	N/A	CL

Note: Atterberg Limits tested in accordance with ASTM D4318.

Materials Testing, Inc.

PLASTICITY CHART AND DATA

Proposed Industrial Building
700 Crocker Drive, Vacaville, California

Client No:	Date:	Report No:
VV4376-001	11/2/2017	0300-012

Sunland Analytical
11419 Sunrise Gold Circle, #10
Rancho Cordova, CA 95742
(916) 852-8557

Date Reported 10/27/2017
Date Submitted 10/23/2017

To: Dave Cymanski
K.C. Engineering
8798 Airport Road
Redding, CA 96002

From: Gene Oliphant, Ph.D. \ Randy Horney
General Manager \ Lab Manager

The reported analysis was requested for the following location:
Location : VV4376 Site ID : 34 @ 0-5 FT.
Thank you for your business.

* For future reference to this analysis please use SUN # 75495-157583.

EVALUATION FOR SOIL CORROSION

Soil pH	6.57	
Minimum Resistivity	1.10 ohm-cm (x1000)	
Chloride	6.5 ppm	00.00065 %
Sulfate	15.3 ppm	00.00153 %

METHODS
pH and Min.Resistivity CA DOT Test #643
Sulfate CA DOT Test #417, Chloride CA DOT Test #422

USGS Design Maps Summary Report

User-Specified Input

Report Title VV4376 Industrial Building
Sun October 29, 2017 16:29:28 UTC

Building Code Reference Document ASCE 7-10 Standard
(which utilizes USGS hazard data available in 2008)

Site Coordinates 38.4143°N, 121.9467°W

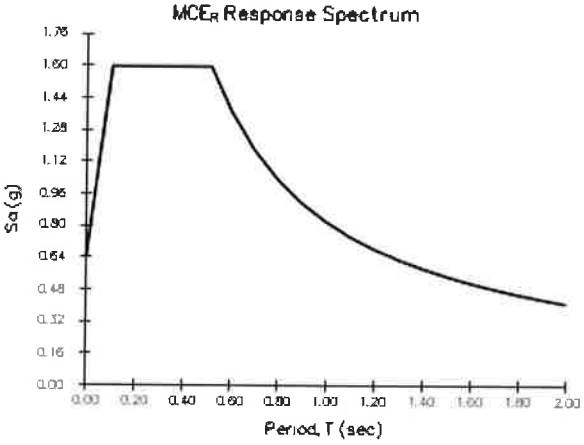
Site Soil Classification Site Class D – "Stiff Soil"

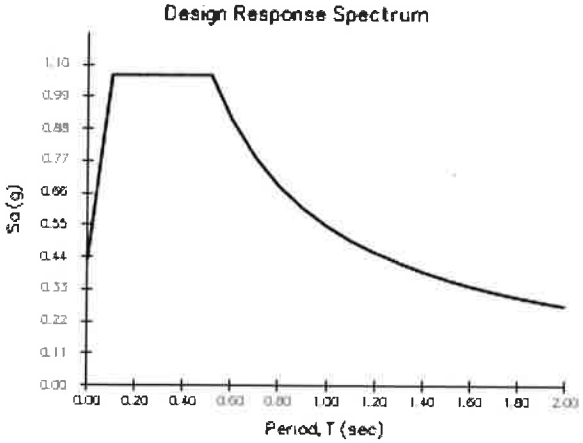
Risk Category I/II/III

USGS-Provided Output

S_S =	1.597 g	S_{MS} =	1.597 g	S_{DS} =	1.065 g
S_1 =	0.548 g	S_{M1} =	0.822 g	S_{D1} =	0.548 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.





For PGA_M, T_L, C_{RS}, and C_{R1} values, please view the detailed report.

Although this information is a product of the U.S. Geological Survey, we provide no warranty, expressed or implied, as to the accuracy of the data contained therein. This tool is not a substitute for technical subject-matter knowledge.

USGS Design Maps Detailed Report

ASCE 7-10 Standard (38.4143°N, 121.9467°W)

Site Class D – "Stiff Soil", Risk Category I/II/III

Section 11.4.1 — Mapped Acceleration Parameters

Note: Ground motion values provided below are for the direction of maximum horizontal spectral response acceleration. They have been converted from corresponding geometric mean ground motions computed by the USGS by applying factors of 1.1 (to obtain S_S) and 1.3 (to obtain S_1). Maps in the 2010 ASCE-7 Standard are provided for Site Class B. Adjustments for other Site Classes are made, as needed, in Section 11.4.3.

From Figure 22-1 [1] $S_S = 1.597$ g

From Figure 22-2 [2] $S_1 = 0.548$ g

Section 11.4.2 — Site Class

The authority having jurisdiction (not the USGS), site-specific geotechnical data, and/or the default has classified the site as Site Class D, based on the site soil properties in accordance with Chapter 20.

Table 20.3–1 Site Classification

Site Class	$\bar{v}_s$	$\bar{N}$ or $\bar{N}_{ch}$	$\bar{s}_u$
A. Hard Rock	>5,000 ft/s	N/A	N/A
B. Rock	2,500 to 5,000 ft/s	N/A	N/A
C. Very dense soil and soft rock	1,200 to 2,500 ft/s	>50	>2,000 psf
D. Stiff Soil	600 to 1,200 ft/s	15 to 50	1,000 to 2,000 psf
E. Soft clay soil	<600 ft/s	<15	<1,000 psf
	Any profile with more than 10 ft of soil having the characteristics: • Plasticity index $PI > 20$, • Moisture content $w \geq 40\%$, and • Undrained shear strength $\bar{s}_u < 500$ psf		
F. Soils requiring site response analysis in accordance with Section 21.1	See Section 20.3.1		

For SI: 1ft/s = 0.3048 m/s 1lb/ft² = 0.0479 kN/m²

Section 11.4.3 — Site Coefficients and Risk-Targeted Maximum Considered Earthquake (MCE_R) Spectral Response Acceleration Parameters

Table 11.4-1: Site Coefficient F_a

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at Short Period				
	$S_S \leq 0.25$	$S_S = 0.50$	$S_S = 0.75$	$S_S = 1.00$	$S_S \geq 1.25$
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 S_S

For Site Class = D and S_S = 1.597 g, F_a = 1.000

Table 11.4-2: Site Coefficient F_v

Site Class	Mapped MCE_R Spectral Response Acceleration Parameter at 1-s Period				
	$S_1 \leq 0.10$	$S_1 = 0.20$	$S_1 = 0.30$	$S_1 = 0.40$	$S_1 \geq 0.50$
A	0.8	0.8	0.8	0.8	0.8
B	1.0	1.0	1.0	1.0	1.0
C	1.7	1.6	1.5	1.4	1.3
D	2.4	2.0	1.8	1.6	1.5
E	3.5	3.2	2.8	2.4	2.4
F	See Section 11.4.7 of ASCE 7				

Note: Use straight-line interpolation for intermediate values of S_1

For Site Class = D and S_1 = 0.548 g, F_v = 1.500

Equation (11.4–1): $S_{MS} = F_a S_S = 1.000 \times 1.597 = 1.597$ g

Equation (11.4–2): $S_{M1} = F_v S_1 = 1.500 \times 0.548 = 0.822$ g

Section 11.4.4 — Design Spectral Acceleration Parameters

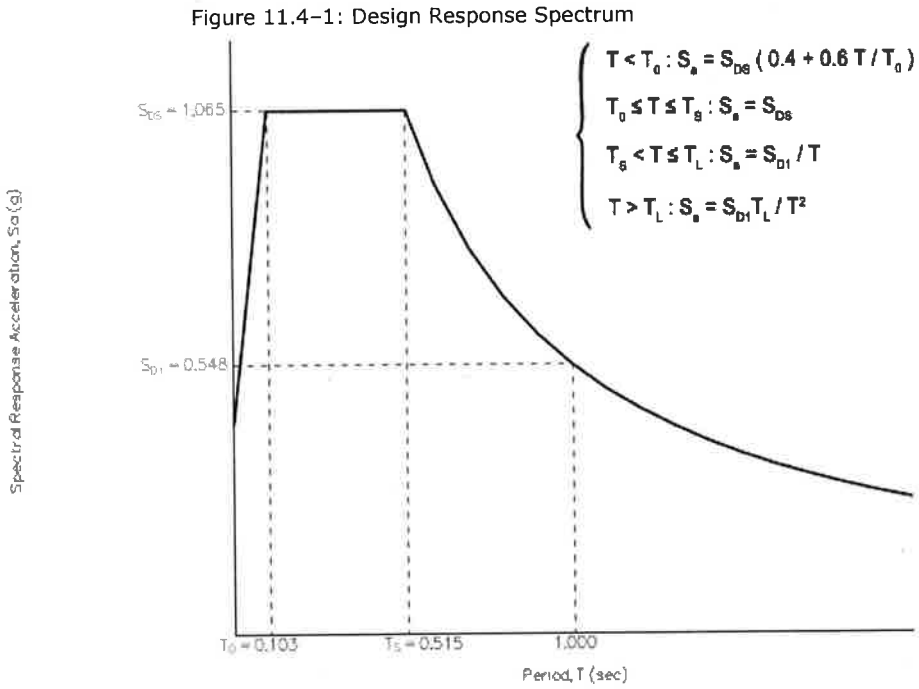
Equation (11.4–3): $S_{DS} = \frac{2}{3} S_{MS} = \frac{2}{3} \times 1.597 = 1.065$ g

Equation (11.4–4): $S_{D1} = \frac{2}{3} S_{M1} = \frac{2}{3} \times 0.822 = 0.548$ g

Section 11.4.5 — Design Response Spectrum

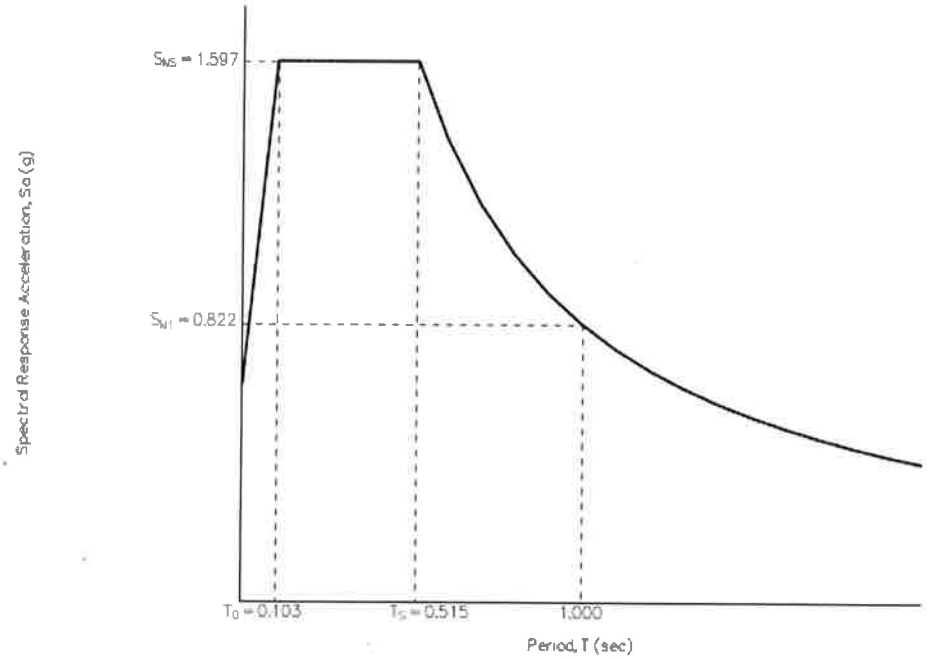
From Figure 22-12 [3] $T_L = 8$ seconds

Figure 11.4–1: Design Response Spectrum



Section 11.4.6 — Risk-Targeted Maximum Considered Earthquake (MCE_R) Response Spectrum

The MCE_R Response Spectrum is determined by multiplying the design response spectrum above by 1.5.



Section 11.8.3 — Additional Geotechnical Investigation Report Requirements for Seismic Design Categories D through F

From Figure 22-7 [4] PGA = 0.582

Equation (11.8–1): $PGA_M = F_{PGA}PGA = 1.000 \times 0.582 = 0.582$ 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 = 0.582 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} = 0.993

From Figure 22-18 [6] C_{R1} = 1.036

Section 11.6 — Seismic Design Category

Table 11.6-1 Seismic Design Category Based on Short Period Response Acceleration Parameter

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50g \leq S_{DS}$	D	D	D

For Risk Category = I and S_{DS} = 1.065 g, Seismic Design Category = D

Table 11.6-2 Seismic Design Category Based on 1-S Period Response Acceleration Parameter

VALUE OF S_{D1}	RISK CATEGORY		
	I or II	III	IV
$S_{D1} < 0.067g$	A	A	A
$0.067g \leq S_{D1} < 0.133g$	B	B	C
$0.133g \leq S_{D1} < 0.20g$	C	C	D
$0.20g \leq S_{D1}$	D	D	D

For Risk Category = I and S_{D1} = 0.548 g, Seismic Design Category = D

Note: When S_1 is greater than or equal to 0.75g, the Seismic Design Category is **E** for buildings in Risk Categories I, II, and III, and **F** for those in Risk Category IV, irrespective of the above.

Seismic Design Category ≡ "the more severe design category in accordance with Table 11.6-1 or 11.6-2" = D

Note: See Section 11.6 for alternative approaches to calculating Seismic Design Category.

References

1. *Figure 22-1*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-1.pdf
2. *Figure 22-2*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-2.pdf
3. *Figure 22-12*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-12.pdf
4. *Figure 22-7*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-7.pdf
5. *Figure 22-17*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-17.pdf
6. *Figure 22-18*: https://earthquake.usgs.gov/hazards/designmaps/downloads/pdfs/2010_ASCE-7_Figure_22-18.pdf

Phase I Environmental Site Assessment
700 Crocker Drive
Vacaville, California

Prepared for:
700 Crocker Owner, LLC
3140 Peacekeeper Way
McClellan, California
95652

Guggenheim Commercial Real Estate Finance, LLC
330 Madison Avenue
8th Floor
New York, New York 10017

Prepared by:
Stantec Consulting Services Inc.
3875 Atherton Road
Rocklin, CA 95765

Project No.: 185703741

September 7, 2017

Sign-off Sheet and Signatures of Environmental Professionals

This document entitled Phase I Environmental Site Assessment was prepared by Stantec Consulting Services Inc. (Stantec) for the account of 700 Crocker Owner, LLC and Guggenheim Commercial Real Estate Finance, LLC (GCREF). The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Except for as outlined herein, any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

All information, conclusions, and recommendations provided by Stantec in this document regarding the Phase I ESA have been prepared under the supervision of and reviewed by the professionals whose signatures appear below.

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 Property. I have developed and performed all the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Author _____
(signature)

Corinne Ackerman, Ph.D.
Associate Scientist

Reviewer _____
(signature)

Danielle Manning
Senior Project Manager

Reviewer _____
(signature)

Elias Rashmawi
Managing Senior Principal

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Abbreviations

APN	Assessor Parcel Number
AQMD	Air Quality Management District
AST	Aboveground Storage Tank
ASTM	American Society for Testing and Materials
ATC	Authority to Construct
bgs	below ground surface
CA FID UST	California Facility Inventory Database
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERS	California Environmental Reporting System
CGS	California Geologic Survey
CHMIRS	California Hazardous Material Incident Report System
CREC	Controlled Recognized Environmental Condition
CVRWQCB	Central Valley Regional Water Quality Control Board
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
ECHO	Enforcement and Compliance History Information
EDR	Environmental Data Resources, Inc.
EMI	Emissions Inventory Data
EP	Environmental Professional
EPA	Environmental Protection Agency
ESA	Environmental Site Assessment
FINDS	Facility Index System
gpm	Gallons per Minute
HAZNET	Hazardous Waste Facility Manifest Data
HIST UST	Historical UST
HREC	Historical Recognized Environmental Condition
kg	Kilograms
LUST	Leaking underground storage tank
MSL	Mean sea level
NPDES	National Pollutant Discharge Elimination System
RCRA SQG	Resource Conservation and Recovery Act Small Quantity Generator
REC	Recognized Environmental Condition
RGA	Recovered Government Archive

RWQCB	Regional Water Quality Control Board
SCDRM	Solano County Department of Resource Management
SF	Square feet
SWEEPS UST	Statewide Environmental Evaluation and Planning System Underground Storage Tank Listing
USGS	United States Geological Survey
UST	Underground Storage Tank
WDS	Waste Discharge System

1.0 SUMMARY

Stantec Consulting Services Inc. (Stantec) has completed a Phase I Environmental Site Assessment (ESA) report of the property located at 700 Crocker Drive, in Vacaville, Solano County, California (the "Property"), on behalf of 700 Crocker Owner, LLC and GCREF (the "Client"). The work was performed according to Stantec's proposal and terms and conditions dated May 30, 2017 and accepted by 700 Crocker Owner, LLC (LDK Ventures) on May 30, 2017. 700 Crocker Owner, LLC and GCREF (the "Users") have been designated as the Users of this report.

The Phase I ESA was conducted in conformance with the requirements of American Society for Testing and Materials (ASTM) Designation E 1527-13, except as may have been modified by the scope of work, and terms and conditions, requested by the Client. Any exceptions to, or deletions from, the ASTM practice are described in Section 2.3.

The Property consists of approximately 124.14 acres of land comprised of two parcels identified by the Solano County Assessor Office as Assessor Parcel Numbers (APN) 0106-240-340 (52.57 acres) and 0106-240-350 (71.57 acres). The Property is currently developed with an approximate 843,248 square foot (SF) cross loaded warehouse facility, a guard shack, a transportation office, a truck maintenance facility, an approximate 30,000 SF cross dock facility, a portable office, fire pump house, water storage tanks, and employee parking. The northern portion of the Property consists of undeveloped land. The Property is located on the west side of Highway 505 in a mixed-use area of Vacaville, California. Surrounding properties are primarily industrial, residential, and agricultural. A Property location map is illustrated on Figure 1. A Property map illustrating the main features of the Property is provided as Figure 2. Photographs taken during the site reconnaissance visit are provided in Appendix A.

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 700 Crocker Drive, in Vacaville, California, the Property. Any exceptions to, or deletions from, this practice are described in the Data Gaps section of this report. This assessment has revealed no evidence of recognized environmental conditions (RECs) in connection with the Property, with the exception of the following:

- Two 500-gallon diesel aboveground storage tanks (ASTs) are in use at the Property for the fire pumps. Due to the presence of the diesel ASTs, this is considered to be a REC to the Property.

- Significant staining was observed in the former battery charging room. Some of the staining was observed near or co-located with cracks in the concrete and floor drains. Reportedly the floor drains were disconnected from the sanitary system; however the staining in the areas of the floor drains and cracks could present a conduit to the subsurface and therefore this is considered to be a REC.

- The Property was listed on several environmental databases relating to the historical underground storage tanks (USTs) and associated environmental cases. Between 1989 and 2006, a total of ten diesel USTs were removed from the Property. Soil excavation and groundwater monitoring were performed in response to diesel impacts from the USTs. On June 17, 1998, the leaking UST (LUST) case associated with the Property received regulatory closure and is therefore considered to be a HREC.

2.0 INTRODUCTION

The objective of this Phase I ESA was to perform appropriate inquiry into the past ownership and uses of the Property consistent with good commercial or customary practice as outlined by the ASTM in "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process", Designation E1527-13. The purpose of this Phase I ESA was to identify, to the extent feasible, adverse environmental conditions including recognized environmental conditions (RECs) of the Property.

The ASTM E1527-13 standard indicates that the purpose of the Phase I ESA is to identify RECs, including historical recognized environmental conditions (HRECs), and controlled recognized environmental conditions (CRECs) that may exist at a property. The term "recognized environmental conditions" means the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property:

(1) Due to any release to the environment;

(2) Under conditions indicative of a release to the environment; or

(3) Under conditions that pose a material threat of a future release to the environment.

ASTM defines a HREC as a REC that has occurred in connection with the Property, but has been addressed to the satisfaction of the applicable regulatory authority and meets unrestricted use criteria established by a regulatory authority, without subjecting the Property to any required controls (for example, Property use restrictions, activity and use limitations, institutional controls, or engineering controls). Before calling the past release a HREC, the environmental professional must determine whether the past release is a REC when the current Phase I ESA is conducted (for example, if there has been a change in the regulations). If the Environmental Professional (EP) considers the past release to be a REC at the time the Phase I ESA is conducted, the condition shall be included in the conclusions section of the report as a REC.

ASTM defines a CREC as a REC resulting from a past release of hazardous substances or petroleum products that has been addressed to the satisfaction of the applicable regulatory authority (for example, as evidenced by the issuance of a no further action letter or equivalent, or meeting risk-based criteria established by regulatory authority), but with hazardous substances or petroleum products allowed to remain in place subject to the implementation of required controls (for example, property use restrictions, activity and use limitations, institutional controls, or engineering controls).

De minimis conditions are not RECs. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. As indicated, the term REC does not include de minimis conditions, which generally do not present a material risk to human health and would not likely be subject to enforcement action if brought to the attention of governmental agencies.

This ESA was conducted in accordance with our proposal to 700 Crocker Owner, LLC (LDK Ventures) dated May 30, 2017 and Client's authorization on May 30, 2017. The scope of work conducted during this Phase I ESA consisted of a visual reconnaissance of the Property, interviews with key individuals, and review of reasonably ascertainable documents. The scope of work did not include an assessment for environmental regulatory compliance of any facility ever operated at the Property (past or present), or sampling and analyzing of environmental media. Stantec was not contracted to perform any independent evaluation of the purchase or lease price of the Property and its relationship to current fair market value. The conclusions presented in this ESA report are professional opinions based on data described herein. The opinions are subject to the limitations described in Section 2.3.

ASTM E1527-13 notes that the availability of record information varies from source to source. The User or Environmental Professional is not obligated to identify, obtain, or review every possible source that might exist with respect to a property. Instead, ASTM identifies record information that is reasonably ascertainable from standard sources. "Reasonably ascertainable" means:

(1) Information that is publicly available;

(2) Information that is obtainable from its source within reasonable time and cost constraints; and

(3) Information that is practicably reviewable.

2.1 PROPERTY DESCRIPTION

The Property consists of approximately 124.14 acres of land comprised of two parcels identified by the Solano County Assessor Office as APN 0106-240-340 (52.57 acres) and 0106-240-350 (71.57 acres). The Property is currently developed with an approximate 843,248 square foot (SF) cross loaded warehouse facility, a guard shack, a transportation office, a truck maintenance facility, an approximate 30,000 SF cross dock facility, a portable office, fire pump house, water storage tanks, and employee parking. The northern portion of the Property consists of undeveloped land. Property is located on the west side of Highway 505 in a mixed-use area of Vacaville, California. Surrounding properties are primarily industrial, residential, and agricultural. A Property location map is illustrated on Figure 1. A Property map illustrating the main features and adjacent properties is provided as Figure 2. A Property detail map is provided as Figure 3. Photographs taken during the site reconnaissance visit are provided in Appendix A.

2.2 SPECIAL TERMS, CONDITIONS, AND SIGNIFICANT ASSUMPTIONS

There were no special terms, conditions, or significant assumptions associated with this Phase I ESA.

2.3 EXCEPTIONS AND LIMITING CONDITIONS

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided and given the schedule and budget constraints established by the client. No other representations, warranties, or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential and actual liabilities and conditions associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the Property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by Stantec in regards to it.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available, and the results of the work. They are not a certification of the property's environmental condition.

Subject to the limitations contained in the Report and the following terms and conditions listed below, we also acknowledge that Guggenheim Commercial Real Estate Finance, LLC, and any of their affiliates, members, employees, agents, successors and assigns may rely upon this report in evaluating a request for an extension of credit (the "Mortgage Loan") to be secured by the property that is the subject of the Report. This information may also be used and relied upon by any actual or prospective purchaser, transferee, pledgee, assignee, or servicer of the Mortgage Loan, any actual or prospective investor (including agent or advisor) in any securities evidencing a beneficial interest in or backed by the Mortgage Loan, any rating agency actually or prospectively rating any such securities, any indenture trustee, and any institutional provider(s) from time to time of any liquidity facility or credit support for such financing. In addition, a reference to this report may be included in any offering circular, private placement memorandum, registration statement, or prospectus and Stantec agrees to cooperate in answering questions by any of the above parties in connection with a securitization or transaction involving the Mortgage Loan and/or such securities. The Report has no other purpose and should not be relied upon by any other person or entity.

This report relates solely to the specific project for which Stantec was retained and the stated purpose for which this report was prepared and shall not be used or relied upon by the client

identified herein for any variation or extension of this project, any other project, or any other purpose.

This report has been prepared for the exclusive use of the client identified herein and any use of or reliance on this report by any third party is prohibited, except as may be consented to in writing herein by Stantec or as required by law. The provision of any such consent is at Stantec's sole and unfettered discretion. The total amount of any and all claims the Recipient and any other party relying on the report may have against Stantec under this reliance or arising out of the report under any theory of law, including but not limited to claims for negligence and/or negligent misrepresentation, shall be strictly limited, in the aggregate for all reliance parties to $500,000. To the fullest extent permitted by law, it is agreed that Stantec shall bear no liability whatsoever for any incidental, indirect or consequential damages arising out of the report or this reliance, including but not limited to, loss of use, loss of profit, loss of business, loss of income, loss of opportunity or any other consequential damages, howsoever caused. It is agreed that any claim brought against Stantec by the Recipient must be brought no later than one year after the date of this report or the expiration of the applicable statutory limitation period, whichever is earlier.

Project Specific limiting conditions are provided in Section 2.2.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures must be confirmed by the client and Stantec assumes no liability resulting from damage to such utilities and structures.

The conclusions are based on the conditions encountered at the Property by Stantec at the time the work was conducted. Accordingly, additional studies and actions may be required. As the purpose of this report is to identify selected Property conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the Property is beyond the scope of this assessment. The findings, observations, and conclusions expressed by Stantec in this report are not an opinion concerning the compliance of any past or present owner or operator of the Property which is the subject of this report with any Federal, state, provincial or local law or regulation.

This report presents professional opinions and findings of a scientific and technical nature. It does not and shall not be construed to offer a legal opinion or representations as to the requirements of, nor compliance with, environmental laws, rules, regulations or policies of Federal, state, provincial or local governmental agencies. Issues raised by the report should be reviewed by client legal counsel.

Stantec specifically disclaims any responsibility to update the conclusions in this report if new or different information later becomes available or if the conditions or activities on the Property subsequently change.

2.4 PERSONNEL QUALIFICATIONS

This Phase I ESA was conducted by, or under the supervision of, an individual that meets the ASTM definition of an EP. The credentials of the EP and other key Stantec personnel involved in conducting this Phase I ESA are provided in Appendix B.

3.0 USER-PROVIDED INFORMATION

ASTM E1527-13 describes responsibilities of the User to complete certain tasks in connection with the performance of "All Appropriate Inquiries" into the Property. The ASTM standard requires that the Environmental Professional request information from the User on the results of those tasks because that information can assist in the identification of RECs, CRECs, HRECs, or *de minimis* conditions in connection with the Property. Towards that end, Stantec requested that the User provide the following documents and information:

Description of Information	Provided (Yes / No)	Description and/or Key Findings
User Questionnaire	Yes	The User indicated that they have only limited knowledge of environmental conditions at the Property due to the short period of time User has been under contract.
Environmental Liens or Activity Use Limitations	No	The User has no knowledge of activity use limitations or environmental liens associated with the Property.
Previous Environmental Permits or Reports Provided by User	Yes	The User provided several documents including a monthly waste water reports, stormwater reports, drinking water reports, California Environmental Reporting System (CERS) report for hazardous materials, and a permit from the Yolo/Solano Air Quality Management District (AQMD).
Purpose of the Phase I ESA	Yes	Environmental due diligence.

In addition, the User provided Stantec with an Underground Storage Tank (UST) Case Closure Certification for the Property, dated June 17, 1998. This report is discussed in Section 4.2.1. The closure certification and the completed User Questionnaire are included in Appendix C.

4.0 RECORDS REVIEW

The objective of consulting historical sources of information is to develop the history of the Property and surrounding area, in order to evaluate if past uses may have resulted in RECs. Physical setting records are evaluated to determine if the physical setting may have contributed to adverse environmental conditions in connection with the Property. During the review of historical records, Stantec attempted to identify uses of the Property from the present to the first developed use of the Property. Stantec's research included the reasonably ascertainable and useful records described in this section.

4.1 PHYSICAL SETTING

A summary of the physical setting of the Property is provided in the table below with additional details in the following subsections.

Topography:	The Property is relatively flat, and is at approximately 108 feet above mean sea level (msl). The Property is depicted on the United States Geologic Survey (USGS) 7.5-minute Topographic Map Sheet of the Allendale, California Quadrangle.
Soil/Bedrock Data:	According to the EDR Radius Map Report, the dominant soil composition in the general area of the Property ranges from clay and silty clay loams to gravelly sandy loams. According to historical site investigation reports for the Property, the soil underlying the Property consists mainly of clays, and sands.
Estimated Depth to Groundwater/ Estimated Direction of Gradient:	No information regarding depth to groundwater or groundwater flow direction was identified for the Property. According to historical groundwater monitoring reports prepared for the Property groundwater flow at the Property is to the southwest with an average depth to water of 80 feet below top of casing.
Note: Site-specific groundwater direction and depth can only be determined by conducting site-specific testing, which Stantec has not conducted.	

4.1.1 Property Topography and Surface Water Flow

The Property is located at an elevation of approximately 108 feet above msl. Topography at the Property is generally flat, with a slight gradient to the east northeast. Surface drainage at the Property likely percolates directly into the ground surface or is diverted to storm drains in the paved areas of the Property.

4.1.2 Regional and Property Geology

The Property is located in the Great Valley geomorphic province of California, consisting on an alluvial plain extending through the interior of the state from the Sacramento Valley to the San Joaquin Valley. The Great Valley is comprised of sediments that have been deposited nearly continuously since the Jurassic period. The Great Valley is bound to the east by the Sierra Nevada mountain range, a tilted fault block extending almost 400 miles in length, and to the west by the Coast Ranges, that run subparallel to the San Andreas Fault and dip beneath the alluvium of the Great Valley. (California Geologic Survey [CGS] 2002).

4.1.3 Regional and Property Hydrogeology

The Property is located in the Suisun-Fairfield Valley groundwater basin, which is located in the San Francisco Bay Hydrologic Region. In the Suisun-Fairfield Valley groundwater basin, the municipal and irrigation wells have average depths ranging from about 20 to 1,010 feet. Well yields in this basin range up to 865 gallons per minute (gpm) (Department of Water Resources [DWR], 2014).

The Suisun-Fairfield Valley groundwater basin consists of low alluvial plains surrounding foothills and mountains located immediately north of Suisun Bay. The basin is bounded to the north by the Vaca Mountains, to the east by consolidated rock that extend from Vacaville southeast to the Montezuma Hills, and to the west by the Coast Ranges. The basin is drained by Green Valley Creek and Laurel Creek into Suisun Bay to the south (Thomasson et al., 1960 and DWR, 2014). The basin is comprised of recent, and Pleistocene alluvium, and Pliocene Sonoma Volcanics. The alluvium consists of fine-grained silt, clay and sand, and loose to moderately compacted silt clay and gravel. Pliocene Sonoma Volcanics are comprised of interbedded tuff, tuff breccia, agglomerate and flow rock. Precipitation ranges from less than 16 inches in the southeast to more than 24 inches in the northwest (DWR 2014).

Stantec searched the Regional Water Quality Control Board's (RWQCB's) GeoTracker Database to identify data pertaining to local subsurface conditions. No data was found in the vicinity of the Property.

4.2 FEDERAL, STATE AND TRIBAL ENVIRONMENTAL RECORDS

A regulatory agency database search report was obtained from Environmental Data Resources (EDR), a third-party environmental database search firm. A complete copy of the database search report, including the date the report was prepared, the date the information was last updated, and the definition of databases searched, is provided in Appendix D.

Stantec evaluated the information listed within the database relative to potential impact to the Property, assessing the potential for impacts based in part on the physical setting. As part of this process, inferences have been made regarding the likely groundwater flow direction at or near the Property. The inferred groundwater flow in the general vicinity of the Property ranges from southwest, to east southeast to southeast. Observations about the Property and surrounding properties made during the Property reconnaissance are provided in more detail in Section 5.

4.2.1 Listings for Property

According to the database search report, the Property address, identified as 700 Crocker Drive was listed in the following databases: Environmental Protection Agency (EPA) Facility Index System/Facility Registry System (FINDS) under EPA Registry ID 110018993847, Enforcement and Compliance History Information (ECHO), Recovered Government Archive Leaking Underground Storage Tank (RGA LUST), Underground Storage Tank (UST), Leaking Underground Storage Tank (LUST), Aboveground Storage Tank (AST), Historical UST (HIST UST), Hazardous Waste and Substance Site List (HIST CORTESE), Resource Conservation and Recovery Act Small Quantity Generators (RCRA SQG), Statewide Environmental Evaluation and Planning System Underground Storage Tank Listing (SWEEPS UST), California Facility Inventory Database (CA FID UST), California Hazardous Material Incident Report System (CHMIRS), Emissions Inventory Data (EMI), Hazardous Waste Facility Manifest Data (HAZNET), Waste Discharge System (WDS), and National Pollutant Discharge Elimination System (NPDES). The Property is identified in these databases under the names of Albertsons 8795, Lucky's Distribution, Save Mart Supermarket, and ETS (EDR, 2017a).

Prior to 1989, the Property contained five 12,000-gallon fiberglass USTs, and three 12,000-gallon single wall steel USTs used to store diesel fuel on the southwestern portion of the Property and the mid-eastern portion of the Property. The four USTs located in the southwestern area were removed from the Property on September 8, 1989 under the direction of Solano County Department of Environmental Health (SCDEH). The four USTs in the mid-eastern area were removed on February 16, 1989 (one UST), and October 29, 1990 (three USTs). After removal of the USTs in the southwestern portion of the Property, confirmation soil sampling indicated no soil impacts in this area. Confirmation sampling in the mid-eastern area indicated diesel impacted soil (Global ID: T0609500388). Over-excavation of the UST cavity and removal of approximately 2,000 cubic yards of soil was followed by additional soil investigations and installation of seven groundwater monitoring wells (MW-1 through MW-7) to define the extent of impacted soil and groundwater. Following removal of approximately 10.9 gallons of free-product from wells MW-1 and MW-7 between 1991 and 1995, no evidence of free-product was encountered between September 1995 and March 1997. A subsequent investigation of deeper groundwater at the Property indicated that diesel impacts to groundwater were limited and decreasing with depth. A remedial action completion certification was issued by the Solano County Department of Environmental Management on June 17, 1998.

In December 2006 the remaining two 20,000-gallon diesel USTs were removed under Vacaville Fire Department Permit #2006-0796. These USTs were located on the east side of the truck maintenance facility. Soil samples collected from the UST excavation indicated that diesel impacts were present, and subsequently, overexcavation of the dispenser area was performed in January 2007.

Since the hydrocarbon contaminated soil encountered during UST removal activities was subsequently removed, the former presence of the USTs on the Property is not considered to be a REC in connection with the Property. This is considered to be an HREC since it was remediated to the satisfaction of the regulatory agency.

The Property is listed on the AST database for the ASTs associated with the propane AST, diesel generators and the fire pump system. No evidence of leaks, spills, or releases are documented associated with the ASTs, therefore this listing is not considered to be a REC.

The Property is listed as a small quantity generator (SQG; between 100 kilograms [kg] and 1,000 kg] of hazardous waste during any calendar month) of batteries. No history of violations can be found, but there was an accidental release of battery acid as described below.

The CHMIRS database indicated that on May 24 of 1999, a release of diluted battery acid occurred on the Property when a broken water pipe leaked into the battery room. Per the city public works, the leaked material had a pH of 1.9 and flowed into the clarifier, then the sewer and then into a holding pond on the Lucky property. No additional information was documented in the database for this incident. This is presumed to be an isolated incident and is not considered to be evidence of RECs in connection with the Property.

The Environmental Protection Agency (EPA) ECHO database did not list any violations or details for the Property, therefore this listing is not considered to be a REC.

The NPDES listing is related to a NPDES permit related to the Properties sewer discharge. No violations were noted in the NPDES listing; therefore, this is not considered a REC to the Property.

The HAZNET database indicates that the hazardous waste generated at the Property address has historically included, but not limited to unspecified organic liquid mixture, alkaline solution without metals (with a pH greater than, or equal to 12.5), off-specification, aged, or surplus organics. No violations or reports of releases were identified in the database listing.

The Property address is listed on the Waste Discharge System (CA WDS) database as a facility with a continuous or seasonal discharge that is under waste discharge requirements. The listing is identified as a minor threat to water quality. The listing is further identified as a Category C complexity for facilities that have no waste treatment systems, such as cooling water dischargers.

4.2.2 Listings for Nearby Sites with Potential to Impact Property

Stantec assessed data presented in the environmental agency database search report (EDR, 2017a) to evaluate the potential for conditions to pose a REC, CREC, or HREC for the Property.

Based on this evaluation, the following individual facilities were identified as the most likely potential sources of impact to the Property. The basis for why each of the following listed databases creates a REC for the Property is also provided.

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
International Home Foods Inc 500 Crocker Drive	RCRA-SQG LUST SWEEPS UST CHMIRS EMI HIST CORTESE NPDES WDS	Adjacent to the south (1370 ft)	No
This facility is listed as a small quantity generator of hazardous waste with no history of violations. The facility had an unauthorized release of unleaded gasoline in May 1989 (Global ID: T0609500397), impacting soil. The facility also had three separate unauthorized releases of hydraulic oil to the processing floor in 2011 due to broken hoses. In all three cases, releases were contained and cleaned up. In September 2005, a release of petroleum ether occurred when a technician dropped a container. The facility is reported to have one 550-gallon UST of unknown use on-site. The property also has permits filed with the Yolo/Solano Air Quality Management District for 1995-1998, 2002-2014. The facility is listed in the WDS database for disposing of liquid or semi-solid wastes either continuously, or seasonally. This Category C waste discharge poses a minor threat to water quality. Based on the isolated nature and extent of the documented releases, distance to the Property and groundwater gradient, these do not constitute a REC.			
Oates Country Store 4819 Midway Road	UST SWEEPS UST HIST UST LUST HIST CORTESE CA FID UST EDR Hist Auto	Adjacent to the north (124 ft)	No
This facility is listed for the presence of USTs with a historical unauthorized release of gasoline into soil in 1989. The case (Global ID: T0609500352) was closed as of November 7, 1997. Based on the current regulatory status, this is not considered to be a REC.			
Liquid Carbonics MG Industries Matheson Tri-Gas, Inc. 871 Eubanks Drive	SWEEPS UST CA FID UST WDS UST AST	Adjacent to the southwest (405 ft)	No
This facility is listed for the presence of a 20,000-gallon UST containing diesel fuel, for waste generation and discharge, and for the presence of an AST of unknown capacity and unknown use. No reports of leaks, spills, or violations were reported in the database report or on the Geotracker database. Based on the database listing status and lack of reported release, this is not considered to be a REC.			

Listed Facility Name/Address	Database Listing	Distance/Direction from Property	REC? (YES / NO)
Fire Station, Dixon District 7337 Paddon Road	CA FID UST UST	Adjacent to the north-northwest (1,017 ft)	No
This facility is listed for the presence of a UST of unknown capacity. There are no reported releases associated with the facility, and the UST is reported to be inactive, therefore, this is not considered a REC.			

The remaining listings in the database search report provided in Appendix D do not constitute a potential REC for the Property.

4.3 LOCAL/REGIONAL ENVIRONMENTAL RECORDS

Stantec contacted the following sources to obtain information pertaining to Property use and/or indications of RECs in connection with the Property:

4.3.1 Local Health Department

Agency Name Contact Information	Finding
Solano County Department of Resource Management (SCDRM) Website: http://www.solanocounty.com/depts/rm/default.asp	Stantec reviewed available records at the SCDRM office. Available files for the Property included previous hazardous materials business plans, site assessment reports, UST removal reports, historical permits, UST case closure (June 17, 1998), food inspection reports, waste tire inspection reports, staff inspections, and permit fee receipts for storage of hazardous materials and waste. Pertinent information from the file review supports the information described in Section 4.2.1. An document dated March 31, 1975 indicated that an easement was in place for a two-mile water pipe line that would be constructed of 12" cement/asbestos. The pipe line was proposed to extend from the American Home Foods property located on the east side of I-505 and terminate near the location of the Property. The pipe line was to convey waste water from the tomato and food processing facility to the agricultural area for reuse as irrigation water.
City of Vacaville Public Works Department	Stantec requested information pertaining to municipal water and sewer service for the Property. The Property is

Website: http://www.ci.vacaville.ca.us/departments/public-works	connected to municipal water and sewage serviced by the City of Vacaville.
Yolo/Solano Air Quality Management District (AQMD) Phone (530) 757-3650 Website: http://www.ysaqmd.org/	Stantec submitted a request for public records to review available files for the Property. The AQMD files supplied included an inspection report dated January 9, 2017. In this report it is stated that on December 16, 2016 a surveillance inspection was performed by the AQMD to determine the presence of unpermitted equipment. The inspections and follow-up phone calls AQMD conducted with site representatives determined that the three emergency backup generators and two emergency fire pumps currently installed at the facility were required to be permitted with the Yolo/Solano AQMD and no such permits existed. Mr. Faulkner initially stated that the equipment was permitted through the Bay Area AQMD; however, the Property is located in the Yolo/Solano AQMD jurisdiction and they would not recognize any permits issued by the Bay Area AQMD. It was further determined that the Bay Area AQMD permits were terminated in 1989, therefore the equipment was not actively permitted. Due to this, the Yolo/Solano County AQMD issued a violation for not having a valid Authority to Construct (ATC) permit. The violation was resolved when SaveMart applied for and was granted ATC permits (permit numbers C-17-03, C-17-04, C-17-05, C-17-06, and C-17-07). Additionally, the following files were provided by the User: Yolo/Solano AQMD permits to operate as Save Mart Supermarkets for the Property. The supplied permits had ATC numbers C-17-03, C-17-04, C-17-05, C-17-06, and C-17-07. The permits indicated that the Property was constructed in 1977.
Department of Toxic Substances Control (DTSC) Envirostor Database Website: http://www.envirostor.dtsc.ca.gov/public/	The DTSC has no records for the Property address.

4.3.2 Central Valley Regional Water Quality Control Board (RWQCB) and Solano County

Agency Name, Contact Information	Finding
State Water Resources Control Board (SWRCB) GeoTracker database Website: http://geotracker.waterboards.ca.gov/	The Property is identified as a LUST cleanup site (Global ID T0609500388), with diesel as the contaminant of concern. The case was closed as of May 4, 1998 with a case closure certification dated June 17, 1998 issued by SCDRM.

4.3.3 Fire Department

Agency Name Contact Information	Finding
City of Vacaville Fire Department (VFD) Phone: (707) 449-5215 Website: http://www.ci.vacaville.ca.us/departments/fire-department	Stantec requested to review available records on file with the City of Vacaville Fire Department. A representative of the VFD responded that the Property has two 500-gallon diesel aboveground storage tanks (AST) and one 1,000-gallon propane AST. She stated that all other records related to hazardous materials are on file with the SCDRM.

4.3.4 Local Building and/or Planning Department Records

Agency Name, Contact Information	Findings
City of Vacaville Community Development – Building Division Phone: (707) 449-5140	Stantec submitted a request for public records to review available files for the Property. At the time of this report, the Community Development Department had not yet provided records for the Property. Stantec reviewed available building permit information from the *EDR Building Permit Report*. A copy of the EDR report is included in Appendix E. The following permits were reported: • 1/22/15 – re-roof, permit #1501-0153 • 12/23/13 – sewer line repair/replacement, permit #13120157 • 06/26/13 – replace two rooftop HVAC package units, permit #13050269 • 1/22/2013 – sewer line repair/replacement, permit #13010127

Agency Name, Contact Information	Findings
	• 5/8/12 - sewer line repair/replacement, permit #12050054 • 11/16/10 – enclose 4,170 SF of warehouse area with chain-link fence, permit #10110027 • 1/16/07 – HVAC replacement, permit #07010095 • 12/11/06 – miscellaneous plumbing, permit #06120054 • 2/14/01 – alterations/remodel, permit #01010155 • 9/15/00 – alterations/remodel, permit #00090035 • 7/19/99 – alteration to office area, permit #99060046 • 7/23/98 – install storage racks, permit #98070145 • 4/16/90 – addition to tire repair building, permit #90030093 • 12/11/89 – add wall in dispatch office, permit #89120032

4.4 HISTORICAL RECORDS REVIEW

4.4.1 Land Title Records/Deeds

Stantec obtained an environmental lien search report for the Property from EDR. A copy of the environmental lien search report is provided in Appendix E. According to the lien reports, no environmental liens or other activity and use limitations were reported for the Property (EDR, 2017b). In addition, the title report provided by the User did not reveal any environmental liens or other activity and use limitations. A copy of the title report is included in Appendix C.

4.4.2 Aerial Photographs

Stantec reviewed historical aerial photographs provided by EDR (EDR, 2017c). The general type of activity on a property, and land use changes can often be discerned from the type and layout of structures visible in the photographs. However, specific elements of a facility's operation usually cannot be discerned from aerial photographs alone. The following table summarizes Stantec's observations of the reviewed historical aerial photographs.

Year	Scale	Observations, Property and Adjoining Properties
1937	1" = 500'	The Property and adjacent properties to the north, south, east, and west appear to be used primarily as agricultural lands. The property to the north appears to contain several structures. A road in a similar configuration as Midway Road runs east to west along the northern Property boundary. A drainage canal transects the

Year	Scale	Observations, Property and Adjoining Properties
		Property from the northwest corner through the southeast midsection of the Property. Pacific Railroad transects the Property diagonally from southwest to northeast, bridging the drainage canal.
1952	1" = 500'	The Property and adjacent properties to the north, south and west appear similar to the 1937 aerial photograph. A road in a similar configuration as Interstate 505 appears to the east.
1968	1" = 500'	Irrigation canals appear in the northern area of the Property, and along the northwestern Property boundary. The Property and adjacent properties to the north, south, and west appear relatively similar to the 1952 aerial photograph. A building is apparent approximately 1,000 feet south of the Property in the approximate location of what is currently Mariani Packing Company, located at 500 Crocker Drive. The property to the north appears to be more developed with additional structures and buildings, compared with the 1952 photograph. Properties to the west and east remain similar to the 1952 photograph.
1974	1" = 500'	The Property and adjacent properties to the south, east, and west appear to be relatively similar to the 1968 aerial photograph. The adjacent property opposite the northeast boundary of the Property appears to contain fewer structures than in the 1968 photograph.
1984	1" = 500'	The southern portion of the Property appears to be developed with the existing large commercial building, additional smaller structures located northeast of the larger building, and two water tanks. Located in the southwest corner of the Property. On the property to the south, a feature that resembles a pond lies approximately 500 feet south of the water tanks. The buildings lie on a large concrete pad. The Property configuration appears to be the same as present Property features. The property to the north appears to be somewhat more developed than in the 1974 photograph.
1993	1" = 500'	The Property and adjacent properties to the north, east, and west appear relatively similar to the 1984 aerial photograph. An additional road in the same configuration of existing Eubanks Drive appears approximately 750 feet west of the Property. Immediately north of the location of the pond in the 1984 photograph, the adjacent property to the southwest appears to be developed with the currently existing structures.

Year	Scale	Observations, Property and Adjoining Properties
2005	1" = 500'	The Property appears unchanged from the 1993 photograph. The building located on the property to the south appears to have been extended to the north. The property to the north and northwest appear to be somewhat more developed than in the 1993 photograph.
2006	1" = 500'	The Property and surrounding areas appear unchanged from the 2005 photograph.
2009	1" = 500'	The Property and adjacent properties to the north, east and west appear unchanged from the 2006 photograph. A solar array appeared at the adjacent property to the south, located west of the building.
2010	1" = 500'	The Property and surrounding areas appear unchanged from the 2009 photograph.
2012	1" = 500'	The Property and surrounding areas appear unchanged from the 2010 photograph.

Source: Environmental Data Resources, *The EDR Aerial Photo Decade Package, Inquiry Number 4956081.12*, June 6, 2017 (Appendix E).

4.4.3 City Directories

Stantec obtained a city directory report from EDR to review city directories for the Property, in approximately five year intervals (EDR, 2017d). The east and west adjacent properties are primarily vacant land and therefore were not identified in the city directory listings and not included in the table below.

The following is a summary of Stantec's review of the city directory listings:

Subject/Adjacent Property	Year	Listed Occupants
Property: 700 Crocker Drive	1975, 1980, 1985	Street not listed in research source.
	1990	Address not identified in research source.
	1992, 1995, 1999	Lucky Distribution Center
	2003	Albertson's; Thomas Murphy
	2008	Street not listed in research source.
	2013	Freight Handlers; Save Mart Supermarkets

Subject/Adjacent Property	Year	Listed Occupants
Adjacent to the north: 4819 Midway Road	1975, 1980	Street not listed in research source.
	1985, 1990, 1992, 1995, 1999	Oates Country Store
	2003	Midway Foods Inc.; Oates Country Store
	2008, 2013	Oates Country Store
Adjacent to the south: 871 Eubanks Drive	1975, 1980	Street not listed in research source.
	1985	Address not identified in research source
	1990	Ameriglass Air Sprtn
	1992	Liquid Carbon Inds
	1995	Address not listed in research source.
	1999	MG Industries Incorporated
	2003	Cryogenic Transportation Inc.; Messe Griesheim Industries
	2008	Messer Griesheim Inds; MG Industries; Tion Cyrogenic Transportation
	2013	Cryogenic Transportation; MG Industries
Adjacent to the south: 500 Crocker Drive	1975, 1980, 1985	Street not listed in research source.
	1990, 1992, 1995	American Home Foods Inc.; Teamsters Cannery No. 857
	1999	International Home Foods Incorporated; Teamsters Can Workers & Warehouseman Union Local No. 857
	2003	Address not listed in research source.
	2008	Street not listed in research source.
	2013	Address not listed in research source.

EDR. 2017d. *The EDR-City Directory Abstract, Inquiry Number 4956081.5*, June 23, 2017. (Appendix E).

4.4.4 Historical Fire Insurance Maps

Fire insurance maps were developed for use by insurance companies to depict facilities, properties, and their uses for many locations throughout the United States. These maps provide information on the history of prior land use and are useful in assessing whether there may be potential environmental contamination on or near the Property. These maps, which have been periodically updated since the late 19th century, often provide valuable insight into historical Property uses.

Stantec contracted with a third party to search for copies of historical fire insurance maps covering the Property and immediately adjacent properties (EDR, 2017e). The Sanborn® Map Search Report indicated no fire insurance maps covering the Property were found, and is presented in Appendix E.

4.4.5 Historical Topographic Maps

Stantec reviewed historical USGS 7.5-Minute and 15-Minute Topographic Maps of the Allendale, Wolfskill (scale 1:24,000), and Vacaville (scale 1:62,500), California Quadrangle to help identify past Property usage and areas of potential environmental concern.

No RECs were noted during our review of the topographic maps (EDR, 2017f). Copies of the historical maps are provided in Appendix E. The following table summarizes the maps reviewed and our observations.

Year	Scale	Observations, Property and Adjoining Properties
1908	1:62,500	The Property and adjacent properties appear to be undeveloped land. Pacific Railroad transects the Property from the southwestern corner through the northeastern corner. A road in a similar configuration to Midway Road borders the northern Property boundary. An ephemeral stream crosses the Property from the northwest to the middle of the eastern Property boundary, and through the southern end of the Property. Several structures are depicted throughout the outlying vicinity to the west.
1917	1:24,000	The Property and vicinity appear similar to the 1908 map.
1953	1:24,000	The Property itself appears similar to the 1917 map, however, a new highway spanning north to south appeared immediately east of the eastern most Property boundary in a similar configuration as existing Interstate 505. A structure appears approximately 1/8-mile west of the western Property boundary. A power line traverses east-west along the southern Property boundary, crossing the southwestern tip of the Property. Several more structures appear in the surrounding vicinity. Several roads appear off of existing Midway Road to the north of the Property.
1968	1:24,000	A large building appears south of the Property in the approximate location of Mariani Packing Company. Putah South Canal appears to the west of the Property with branches of the canal splitting off toward the central and northern portion of the Property. Several additional structures appear in the areas north of the Property.

Year	Scale	Observations, Property and Adjoining Properties
1973	1:24,000	The Property and adjacent properties are depicted similar to the 1968 map.
1978	1:24,000	The Property and adjacent properties are depicted similar to the 1973 map. The areas to the northwest of the Property appear to be somewhat more developed.
2012	1:24,000	The areas to the west of the Property contain more improved roadways, including existing Eubanks Drive.

Source: Environmental Data Resources (EDR). 2017f. *EDR Historical Topographic Map Report, Inquiry Number 4956081.4,* June 5.

4.4.6 Other Historical Sources

No other historical sources were researched.

5.0 SITE RECONNAISSANCE

A visit to the Property and its vicinity was conducted by Ms. Danielle Manning on May 31, 2017. Stantec was accompanied during the Property visit by Mr. Howard Faulkner, Building Engineer with The SaveMart Companies. Figure 2 provides information about the Property and adjoining properties and Figure 3 depicts specific Property details. Photographs collected during the Property visit are included in Appendix A.

5.1 SITE RECONNAISSANCE METHODOLOGY

The site reconnaissance focused on observation of current conditions and observable indications of past uses and conditions of the Property that may indicate the presence of RECs. The reconnaissance of the Property was conducted on foot and Stantec utilized the following methodology to observe the Property:

- Traverse the outer Property boundary.
- Traverse transects across the Property.
- Traverse the periphery of all structures on the Property.
- Visually observe accessible interior areas expected to be used by occupants or the public, maintenance and repair areas, utility areas, and a representative sample of occupied areas.

Weather conditions during the visit to the Property were clear and sunny. There were no weather-related Property access restrictions encountered during the reconnaissance visit.

5.2 GENERAL DESCRIPTION

Property and Area Description:	The Property is located in a mixed-use industrial, agricultural, and residential area of Vacaville, California. The Property is composed of two parcels of land comprising a total of approximately 124.14 acres located at the terminal end of Crocker Drive, west of Interstate 505.
Property Operations.	The Property has been vacant since September 2016, when the previous tenant (Save Mart) moved out.
Structures, Roads, Other Improvements:	The Property consists of the following structures: • Main warehouse – this is a cross load warehouse which is currently vacant, and consists of approximately 843,248 square feet (SF). Within the main warehouse building are seven small, office-type structures, some of which are single-story and some of which are two-story; a former battery charging area; a former repair area; a former

	salvage area; and former offices and employee breakroom. • Guard shack – this is a vacant guard shack at the main facility entrance and consists of approximately 1,000 SF of office space in a single-story structure. • Transportation office – this is a vacant two-story office building which is connected provides access to the main warehouse via a pedestrian walkway on the second level. • Truck maintenance shop – this is a former truck maintenance shop which consists of approximately 8,000 SF with four service bays and a partial mezzanine. • Portable office – this appears to be a former office building comprising approximately 700 SF. • Cross dock – this is a 30,000 SF exterior dock/storage area which is currently storing metal pallet racks. • Fire pump house – the fire pump house consists of approximately 1,600 SF, and is comprised of two separate rooms, each of which house one 500-gallon diesel aboveground storage tank (AST) for the associated fire pumps. • Water storage tanks – two 625,000-gallon water storage are located near the southwest corner of the Property, which hold the supply water for the Property. The Property is accessed via Crocker Drive to the southeast.
Property Size (acres):	Approximately 124.14 acres
Estimated % of Property Covered by Buildings and/or Pavement:	Approximately 45%. The northern portion of the Property consists of undeveloped land.
Observed Current Property Use/Operations:	Vacant warehouse and distribution facility.
Observed Evidence of Past Property Use(s):	Save Mart grocery distribution facility.
Sewage Disposal Method (and age):	Municipal sewer, age unknown.
Potable Water Source:	Onsite groundwater supply well.
Electric Utility:	Pacific Gas & Electric (PG&E)

5.3 HAZARDOUS SUBSTANCES AND PETROLEUM PRODUCTS

The following table summarizes Stantec's observations during the Property reconnaissance.

Observations	Description/Location
Hazardous Substances and Petroleum Products as Defined by CERCLA 42 U.S.C. § 9601(14):	• Two 500-gallon diesel ASTS are located in the fire pump house. • Three diesel generators are located on the exterior of the main warehouse building. • Two five-gallon plastic containers of Chevron GST Oil ISO 32 are located in the flammable cabinet in the fire pump house. One five-gallon plastic container of Chevron GST Oil ISO 32 is located in the fire pump room on an absorbent pad on the concrete floor. • One pallet was observed in the repair area of the main warehouse building which contained one 35-gallon drum of used filters, six cans of spray paint, and two containers of wall texture. • One aboveground propane tank was observed on the east side of the Property. The capacity indicator on the tank indicated that only 4.2 gallons of propane remained.
Drums (≥ 5 gallons):	In addition to the materials noted above, the following non-hazardous materials were observed: • In the former battery charging room the following were observed: one pallet containing 30 five-gallon plastic containers of Poly Patch; one pallet containing three empty gasoline cans; one five-gallon plastic container of dry neutralizer for acids.
Strong, Pungent, or Noxious Odors:	None observed.
Pools of Liquid:	None observed.
Unidentified Substance Containers:	None observed.
PCB-Containing Equipment:	Fluorescent light fixtures were observed throughout the Property, which have PCB-containing light ballasts. Pad-mounted transformers were observed throughout the Property. The dock levelers at each of the loading dock doors are hydraulically powered. No evidence of leaks or spills from this equipment was observed or reported.
Other Observed Evidence of Hazardous Substances or Petroleum Products:	None observed.

5.4 INTERIOR OBSERVATIONS

Stantec made the following observations during the Property reconnaissance of the building interiors and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description/Location
Heating/Cooling Method:	The office areas in the main warehouse building and the ancillary buildings requiring heating and air conditioning are heated and cooled by HVAC package units.
Surface Stains or Corrosion:	Significant staining and corrosion was observed in the former battery charging room of the main warehouse building. Floor drains and cracks in the concrete floor were observed in the areas of staining, with some concrete cracking leading to the floor drains. Staining associated with normal operations at the truck washing and maintenance areas were also observed.
Floor Drains and Sumps:	Floor drains were observed throughout the Property. Specifically, the following significant floor drains of note were observed: • Main warehouse building – in the former battery charging area, several floor drains were observed in the concrete slab. According to Mr. Faulkner the floor drains were blocked off from the sewer system approximately nine years ago. • Main warehouse building – in the former salvage area, a rectangular catch basin was observed. According to Mr. Faulkner the floor scrubbers were rinsed off in this area. • Main warehouse building – in the former repair area, a catch basin was observed in one of the repair bays. • Cross dock building – attached to the cross dock building is a former truck wash area which has a ribbon drain running down the center of the truck wash. All of the above-mentioned drains and all of the minor floor drains observed are connected to any one of the 11 oil/water separators located throughout the Property.

	According to Mr. Faulkner, the oil/water separators will be cleaned out prior to transfer of ownership.
Other Interior Observations:	None observed.

5.5 EXTERIOR OBSERVATIONS

Stantec made the following observations during the site reconnaissance of exterior areas of the Property and/or identified the following information during the interview or records review portions of the assessment:

Observations	Description
On-site Pits, Ponds, or Lagoons:	None observed. According to Mr. Faulkner, a treatment pond associated with the sanitary system on the Property was located on a separate parcel on the east side of I-505.
Stained Soil or Pavement:	None observed, beyond de minimis staining associated with the former operations at the Property.
Stressed Vegetation:	None observed.
Waste Streams and Waste Collection Areas:	Waste from general debris is collected in a garbage compactor located on the east side of the building.
Solid Waste Disposal:	No areas indicative of solid waste disposal were observed.
Potential Areas of Fill Placement:	Areas of fill placement were not observed during the site reconnaissance.
Wastewater:	Wastewater that was discharged from the Property is pre-treated through the onsite clarifiers. Monthly testing of the wastewater is performed. From the Property the wastewater is then discharged to the City of Vacaville sanitary sewer system which is transported to the Elmira Wastewater Treatment Plant.
Stormwater:	Stormwater from the Property likely percolates directly into the ground surface or drains to storm drains located throughout the paved parking and drive areas.
Wells:	One groundwater supply well was observed near the southwest corner of the Property. This well supplies water to the Property via a deep groundwater well. The water is stored in two 625,000-gallon water storage tanks, located near the well. The water is regularly sampled for drinking water standards. The well reportedly produces approximately 660,000 gallons of water per day.
Septic Systems:	No visible evidence of the existence of a septic system was observed.

Observations	Description
Other Exterior Observations:	The northern portion of the Property consists of undeveloped land.

5.6 UNDERGROUND STORAGE TANKS/STRUCTURES

Existing USTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface patches), which would indicate the presence of USTs, was discovered during the site reconnaissance.
Former USTs:	The following USTs have been removed from the Property: <u>Southwestern portion of Property</u> • Four 12,000-gallon fiberglass diesel USTs were installed in 1978 and removed in 1989 <u>Mid-eastern portion of Property</u> • One 12,000-gallon single wall steel diesel UST was removed in 1989 • Three 12,000-gallon (two single wall and one fiberglass) diesel USTs were removed in 1990 <u>East of Maintenance Shop</u> • Two 20,000-gallon diesel USTs were installed in 1991 and removed in 2006
Other Underground Structures:	Eleven oil/water separators were observed throughout the Property.

5.7 ABOVEGROUND STORAGE TANKS

Existing ASTs:	The Property has five existing ASTs: • One 1,000-gallon propane AST located on the east side of the Property • Two 500-gallon diesel ASTs in secondary containment are located in the fire pump house, located near the southwest corner of the Property • Two 625,000-gallon water storage ASTs, located near the southwest corner of the Property
Former ASTs:	No visible evidence (fill pipes, vent pipes, dispensers, surface stains), reports, or other evidence of the former presence of ASTs was discovered during this Phase I ESA.

5.8 ADJOINING PROPERTIES

5.8.1 Current Uses of Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about use and activities on adjoining properties:

NORTH	Midway Road, beyond which is a mixture of commercial, residential, and agricultural properties.
SOUTH	Mariani Foods and cryogenics facility to the south-southwest.
EAST	Interstate 505, beyond which is vacant land.
WEST	Vacant land.

5.8.2 Observed Evidence of Past Uses of Adjoining Properties

Observations of adjoining properties providing indications of past use and activities, if any, are described below.

NORTH	None observed.
SOUTH	None observed.
EAST	None observed.
WEST	None observed.

5.8.3 Pits, Ponds or Lagoons on Adjoining Properties

As viewed from the Property and/or from public rights-of-way, Stantec made the following observations about the presence of pits, ponds and lagoons on adjoining properties:

NORTH	None observed.
SOUTH	None observed.
EAST	None observed.
WEST	None observed.

5.9 OBSERVED PHYSICAL SETTING

Topography of the Property and Surrounding Area:	Topography at the Property and vicinity is generally flat, with a slight gradient to the east-northeast.

6.0 INTERVIEWS

Stantec conducted interviews with the following individuals:

Name	Relationship to Property	Key Findings
Howard Faulkner	Building Engineer	Mr. Faulkner escorted Stantec during the site visit. Mr. Faulkner has been associated with the Property for approximately 17 years. He stated that the Property buildings are currently vacant and that Save Mart was the most recent occupant, and Save Mart began moving out of the Property in September 2016. Mr. Faulkner stated that due to various business acquisitions, the Property was occupied by Supervalue, Albertson's, and Lucky's prior to Save Mart, and that the use has always been as a grocery distribution facility. He stated that the adjacent properties consist of vacant land, a cryogenics plant, and Mariani, which processes dried fruit. Mr. Faulkner also stated that all the USTs at the Property were removed and that truck fueling was performed by a mobile fueling service. He stated that the only existing hazardous materials on the Property consisted of the existing diesel USTs for the fire pumps, and six cans of spray paint, two containers of wall texture, and two containers of oil. The paint, wall texture, and oil was scheduled to be picked up by the week of June 5, 2017. Mr. Faulkner was not aware of any current or past regulatory actions; past releases of hazardous/petroleum materials on the Property; litigation relevant to hazardous materials or petroleum products; administrative proceedings relevant to hazardous materials or petroleum products; or notices from any governmental entity regarding possible violations of environmental laws or possible liability relating to hazardous substances or petroleum products.

7.0 EVALUATION

This section provides a summary overview of or Findings, Opinions, and Conclusions.

7.1 FINDINGS AND OPINIONS

Information gathered from interviews, reviews of existing data, and a Property inspection was evaluated to determine if RECs are present in connection with the Property. Based on this information, Stantec made the following findings and developed the following opinions.

Finding 1: The Property appears to have been primarily undeveloped land until the existing building was constructed circa 1977 (based on AQMD permit information). Light agricultural use may have occurred on the Property; however, no evidence of orchards on the Property or significant agricultural use was noted.

Opinion 1: The historical use of the Property as undeveloped land and light agricultural do not present environmental concerns or a REC to the Property.

Finding 2: The Property was listed on several environmental databases relating to the historical USTs and associated environmental cases. Between 1989 and 2006, a total of ten diesel USTs were removed from the Property. Soil excavation and groundwater monitoring were performed in response to diesel impacts from the USTs. On June 17, 1998, the LUST case associated with the Property received regulatory closure.

Opinion 2: Due to the current regulatory status the LUST case associated with the Property is considered to be a HREC.

Finding 3: The Property has a total of five ASTs, two of which are water storage tanks, two are diesel ASTs, and one is a propane AST. The diesel ASTs are still in use, within secondary containment, and each contain approximately 500-gallons of diesel for the fire pumps. The propane from the propane AST has been removed, leaving only approximately four gallons in the AST.

Opinion 3: The presence of the water storage tanks and propane AST are not considered to be a REC to the Property. The diesel ASTs are still in use and therefore are considered to be a REC.

Finding 4: Significant staining and corrosion was observed in the former battery charging room in the main warehouse building. Floor drains and cracking of the concrete was also observed, some of which was co-located with the staining observed.

Opinion 4: Reportedly the floor drains were disconnected from the sanitary system; however the staining in the areas of the floor drains and cracks could present a conduit to the subsurface and therefore this is considered to be a REC.

Finding 5: An environmental records search was performed and identified sites within their respective ASTM E 1527-13 search radii of the Property that may represent RECs, HRECs, or de minimis conditions.

Opinion 5: Based on one or more of the following reasons: distance from the Property, position of sites with respect to assumed groundwater flow direction, the native soils, and regulatory status, none of the sites identified in the environmental records search report are expected to affect soil or groundwater quality at the Property. The environmental records search identified no RECs at or near the Property.

7.2 DATA GAPS

The federal AAI rule [40 CFR 312.10(a)] and ASTM E1527-13 identify a "data gap" as the lack or inability to obtain information required by the standards and practices of the rule despite good faith efforts by the Environmental Professional or the User.

Any data gaps resulting from the Phase I ESA described in this report are listed and discussed below.

Gap	Discussion
Deletions or Exceptions From Scope of Work Referenced in Section 2.3:	None
Weather-Related Restrictions To Site Reconnaissance:	None
Facility Access Restrictions to Site Reconnaissance:	None
Other Site Reconnaissance Restrictions:	None
Data Gaps From Environmental Records Review:	Records were not yet available from the building department for the Property; however, some building permit information was provided by EDR. Once the files are made available for review, Stantec will issue an addendum to this report if pertinent information is obtained that modifies the conclusions of this report.
Data Gaps From Historical Records Review:	None
Data Gaps From Interviews:	None

Gap	Discussion
Other Data Gaps:	None

7.3 CONCLUSIONS

Stantec has performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E1527-13 of 700 Crocker Drive, Vacaville, California, (the "Property"). Any exceptions to, or deletions from, this practice are described in Section 2.3 of this report. This assessment has revealed no evidence of recognized environmental conditions in connection with the Property, with the exception of the following:

- Two 500-gallon diesel ASTs are in use at the Property for the fire pumps. Due to the presence of the diesel ASTs, this is considered to be a REC to the Property.

- Significant staining was observed in the former battery charging room. Some of the staining was observed near or co-located with cracks in the concrete and floor drains. Reportedly the floor drains were disconnected from the sanitary system; however the staining in the areas of the floor drains and cracks could present a conduit to the subsurface and therefore this is considered to be a REC.

- The Property was listed on several environmental databases relating to the historical USTs and associated environmental cases. Between 1989 and 2006, a total of ten diesel USTs were removed from the Property. Soil excavation and groundwater monitoring were performed in response to diesel impacts from the USTs. On June 17, 1998, the LUST case associated with the Property received regulatory closure and is therefore considered to be a HREC.

8.0 NON-SCOPE CONSIDERATIONS

The scope of work completed was limited solely to those items in the ASTM E1527-13 standard. No ASTM E1527-13 non-scope services were performed as part of this Phase I ESA.

9.0 REFERENCES

American Society for Testing and Materials (ASTM). 2013. *Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process, Designation: E 1527-13*, November.

California Department of Water Resources (DWR). 2014. *California's Groundwater Bulletin 118*, Last update June 30.

California Geologic Survey (CGS). 2002. *Note 36 - California Geomorphic Provinces*.

Environmental Data Resources (EDR). 2017e. *Certified Sanborn® Map Report, Inquiry Number 4956081.3*, June 5.

EDR. 2017c. *EDR Aerial Photo Decade Package, Inquiry Number 4956081.12.* June 6.

EDR. 2017d. *The EDR-City Directory Abstract, Inquiry Number 4956081.5*, June 23.

EDR. 2017f. *EDR Historical Topographic Map Report, Inquiry Number 4956081.4,* June 5.

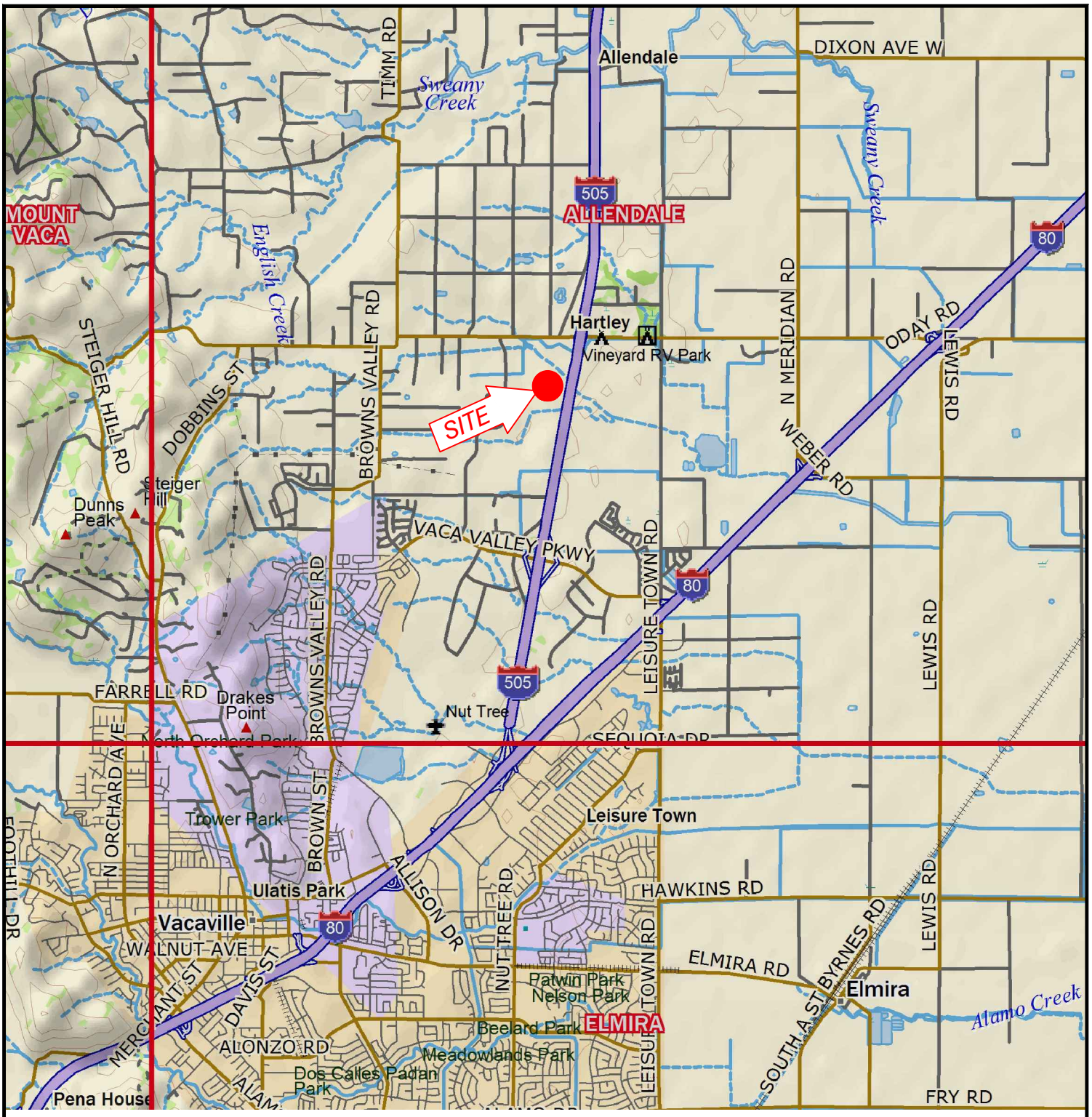
EDR. 2017a. *The EDR Radius Map™ Report with GeoCheck®, Inquiry Number 4956081.2s.* June 5.

EDR. 2017b. The *EDR Environmental Lien and AUL Search, Inquiry Number 4956081.7.* June 6.

EDR. 2017. The *EDR Property Tax Map Report, Inquiry Number 4956081.6.* June 5.

EDR. 2017. *EDR Building Permit Report. Inquiry Number 4956081.8.* June 5.

FIGURES



REFERENCE: DELORME TOPO MAP, ALLENDALE, CALIFORNIA

Stantec

FOR:	PROPERTY LOCATION MAP	FIGURE:
LDK VENTURES 700 CROCKER DRIVE VACAVILLE, CALIFORNIA 95688		1

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
185703741	STA	CEA	DM	06/20/17

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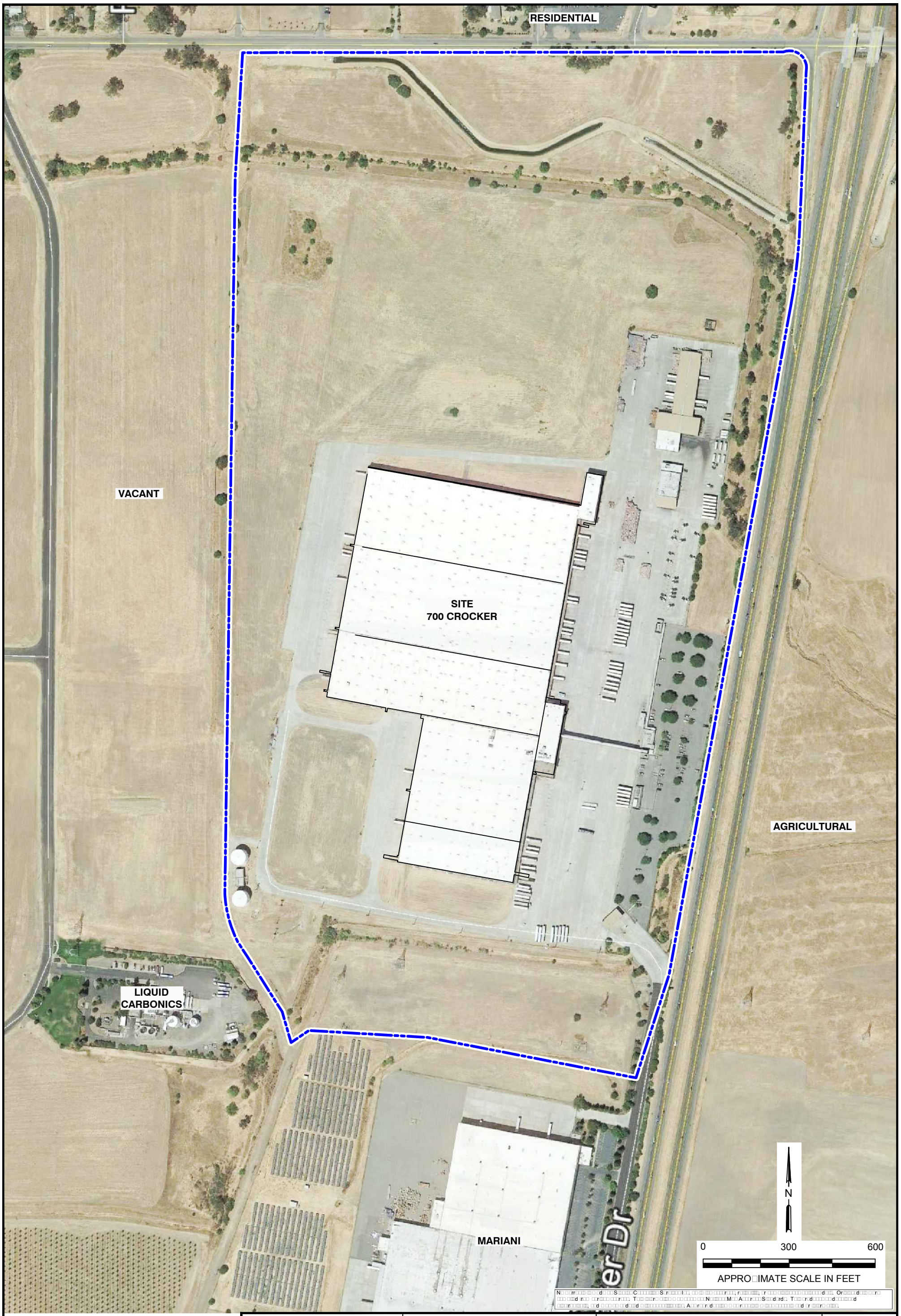

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Stantec

FOR:
LDK VENTURES
700 CROCKER DRIVE
VACAVILLE, CALIFORNIA 95688

PROPERTY VICINITY MAP

FIG□RE:
2

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Stantec

FOR:
LDK VENTURES
700 CROCKER DRIVE
VACAVILLE, CALIFORNIA 95688

PROPERTY DETAIL MAP

FIG□RE: **3**

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Appendix A PHOTOGRAPHS OF THE PROPERTY AND VICINITY

Photo #1 View of the east side of the Property.

Photo #2 View of the west side of the Property.

Photo #3 View of the south side of the main warehouse building.

Photo #4 View of the north side of the main warehouse building.

Photo #5 View of the undeveloped land on the north side of the Property.

Photo #6 View of I-505 to the east and the adjacent property to the east.

Photo #7 View of the adjacent property to the south.

Photo #8 View of the adjacent property to the south-southwest.

Photo #9 View of the truck maintenance building.

Photo #10 View of the service bays in the truck maintenance building.

Photo #11 View of the interior of the cross dock facility.

Photo #12 View of a pad-mounted transformer.

Photo #13 View of the propane AST.

Photo #14 View of the main switch gear.

Photo #15 View of the groundwater supply well.

Photo #16 View of the 625,000-gallon water storage tanks and the fire pump house.

Photo #17 View of one of the fire pumps in the fire pump house.

Photo #18 View of one of the 500-gallon diesel ASTs in the fire pump house.

Photo #19 View of the containers of oil in the flammable cabinet in the fire pump house.

Photo #20 View of the interior of the main warehouse.

Photo #21 View of typical dock doors in the main warehouse.

Photo #22 View of the office area on the mezzanine in the main warehouse building.

Photo #23 View of a typical interior office building in the main warehouse.

Photo #24 View of the former battery charging area.

Photo #25 View of a container of acid neutralizer in the former battery charging area.

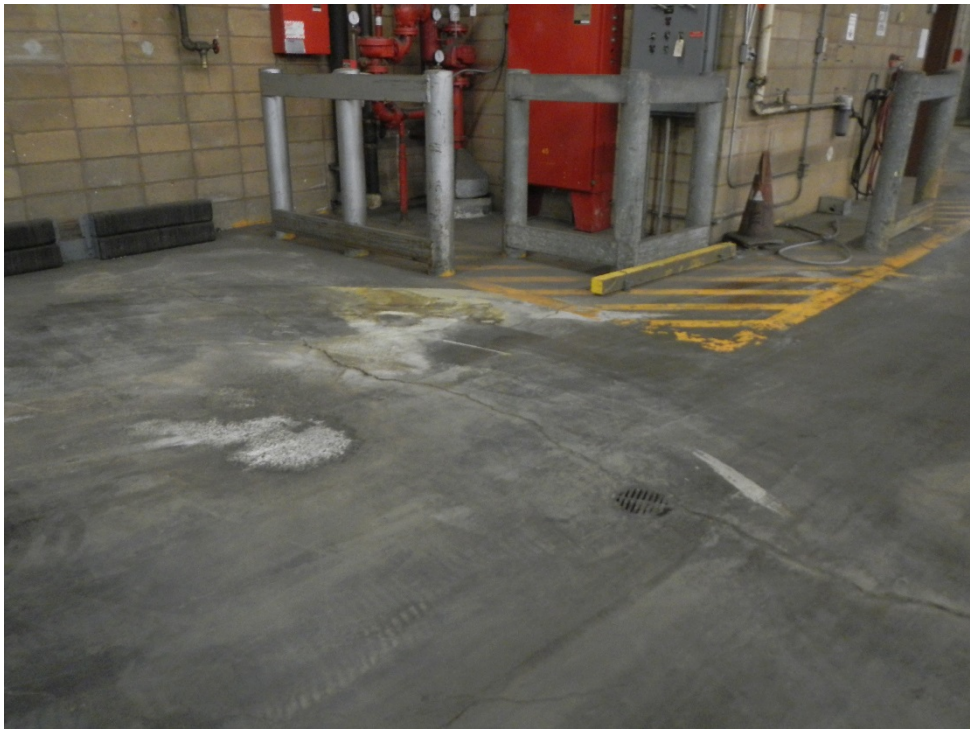

Photo #26 View of typical staining, concrete cracking, and floor drain in the former battery charging area.

Photo #27 View of materials in the former battery charging area.

Photo #28 View of a former repair area in the main warehouse building.

Photo #29 View of the former salvage area.

Photo #30 View of the floor drain in the former salvage area.

Photo #31 View of the transportation office building.

Photo #32 View of the interior of the transportation office building.

Photo #33 View of the portable building.

Photo #34 View of the interior of the portable building.

Photo #35 View of the guard shack and entrance to the Property.

Photo #36 View of the cross dock facility and former truck wash.

Photo #37 View of a typical emergency generator.

Photo #38 View of a typical oil water separator.

Appendix B STANTEC RESUMES

Danielle Manning CSST, LRCIA

Project Manager

Danielle is a Project Manager in the Environmental Services (ES) practice area of Stantec and resides in the Rocklin, California office. Danielle has thirteen years of professional experience in the environmental field and is currently responsible for managing due diligence and hazardous materials projects throughout northern California for a variety of commercial, public, and private sector clients. Danielle is directly responsible for a highly successful, and consistently profitable, team of Stantec employees including geologists, scientists, and other support staff. Danielle's environmental consulting experience includes performing asbestos, lead, and microbial consulting services, which includes sampling, oversight of asbestos abatement contractors during asbestos abatement, and report preparation. Her asbestos consulting experience also entails confirming that the hazardous and non-hazardous asbestos waste is properly removed and disposed of from facilities under all local, state, and federal regulations for abatement and waste disposal. For the past thirteen years, Danielle has also been conducting fieldwork associated with due diligence services throughout California and Nevada to include Phase I and II Environmental Site Assessments in accordance with the American Society of Testing and Materials (ASTM) standards, Transaction Screen Assessments, and Property Condition Assessments in accordance with ASTM standards.

EDUCATION

BA, Environmental Studies, California State University, Sacramento, California, 2001

CERTIFICATIONS & TRAINING

Asbestos Contractor/Supervisor (AHERA) Initial, Vacaville, California, 2002

Asbestos Building Inspector (AHERA) Initial, Rancho Cordova, California, 2002

Lead-Related Construction Inspector/Assessor Initial, Vacaville, California, 2004

Asbestos Project Designer (AHERA), Vacaville, California, 2011

8-Hour Hazardous Waste Operations Supervisor Certificate, Occupational Safety & Health Administration, Rancho Cordova, California, 2008

40-Hour Hazardous Waste Operations Certificate, Occupational Safety & Health Administration, Folsom, California, 2008

First Aid, AED, and CPR Training, Rancho Cordova, California, 2014

8-Hour OSHA Hazardous Waste Operations Refresher Training, Occupational Safety & Health Administration, Rancho Cordova, California, 2015

American Petroleum Institute Safety Key Training, Rancho Cordova, California, 2015

REGISTRATIONS

Certified Site Surveillance Technician, #03-3287, California Department of Occupational Safety and Health

Lead Related Construction Inspector/Risk Assessor #14530, California Department of Public Health

PROJECT EXPERIENCE

Asbestos, Lead Based Paint, and Hazardous Material (mercury, PCB) Assessments

Veteran's Administration of Puget Sound, Seattle, Washington (Project Scientist)

Project Scientist responsible for hazardous building material assessments, specifically asbestos and lead-based paint. These services were required as part of the pre-design tasks for this project. Over 300 samples were collected over the span of four days culminating in a final hazardous building materials report to be incorporated into the facility design as well as demolition activities once the construction phase of the project commences.

Danielle Manning CSST, LRCIA

Project Manager

Asbestos, Lead-Based Paint, and Hazardous Materials Survey, Cupertino, California (Onsite Project Manager)

Danielle was the onsite project manager for a large scale hazardous material identification scope of work which was part of a large scale, accelerated Phase II Environmental Site Assessment. She was responsible for the budgeting, field management and logistics, as well as field quality assurance. The scope of work involved sample collection for asbestos and lead-based paint in addition to the quantification of universal wastes (PCBs, mercury containing equipment, refrigerants, etc.) that would require special handling and disposal. The scope of the project included the interior and exterior of each of the 15 buildings located on the site. The total square footage of the hazardous material identification scope of work total more than 1.3 million square feet and included more than 1,600 asbestos and paint chip samples. Although the driver behind the hazardous material identification portion of the project was for due diligence, the requested level of effort was to complete the work to facilitate the demolition of each of the structures in accordance with federal and local agency requirements.

Assessments for Infrastructure Studies, Sacramento, California (Project Scientist)

As a project scientist, Danielle has performed asbestos, lead-based paint, and hazardous materials assessments, as well as sample collection as part of infrastructure studies performed at the Board of Equalization and State Garage buildings. Project tasks included a review or prior survey data and information related to hazardous materials for the buildings, sampling suspect asbestos-containing materials and suspect lead-based paint, and documenting the inventory and storage of hazardous materials and wastes. The observed conditions and sample results were provided in a report with recommendations for the proper handling and corrective actions for the observed conditions.

Asbestos Survey and Abatement Projects*, Various Locations (Staff Scientist)

Danielle performed numerous asbestos surveys for multiple projects while performing all tasks in accordance with the clients' in-house asbestos management program. She was responsible for interpretation of analytical sampling results, report preparation, and drafting sample location diagrams. She provided asbestos abatement project monitoring that included the collection of air samples during abatement, visual clearances, and clearance sampling.

Campbell Soup Factory Asbestos Assessments*, Sacramento, California (Project Manager/Lead Field Technician)

Danielle served as lead field technician for asbestos surveys at the Campbell Soup Factory in Sacramento over a three-year period, then transitioned into the role of project manager and was responsible to oversee the field technicians. The scope of work included sampling and identification of suspect asbestos-containing materials upon receipt of laboratory analytical results. The data collected was compiled into a database for use by the client in locating identified asbestos-containing materials.

Asbestos and Lead-Based Paint Surveys* (Staff Scientist)

Danielle performed more than 25 asbestos and lead-based paint surveys for a national cellular company. The survey work included the review of drawings showing proposed antennae and associated equipment locations and performing a path of construction survey for the potentially affected suspect asbestos-containing materials and suspect lead-based paint. Danielle prepared site-specific reports with recommendations and conclusions from the laboratory analytical results and observed conditions.

Former Tesoro Coke Facility, Pittsburg, California (Project Scientist)

Danielle was a Project Scientist responsible for preparing pre-mothball assessments, demolition plans, and assisting in preparation of specifications for their petroleum coke facility located in Pittsburg, California. Tesoro wanted to generate the appropriate documents to mothball the facility as well as perform on going environmental monitoring in regards to storm water and spill prevention countermeasures. There were 20 structures at the facility ultimately scheduled for demolition. Tasks included the preparation of an asbestos and lead-based paint survey report that would provide compliance with applicable standards for the demolition of the structures. More than 200 samples were collected over the span of two days. A report was prepared that will stand up to regulatory scrutiny for demolition while providing the information need for worker safety during demolition activities at the facility.

** denotes projects completed with other firms*

Danielle Manning CSST, LRCIA

Project Manager

Environmental Assessments

Hewlett-Packard Company Phase I Environmental Site Assessment, Palo Alto, California (Project Scientist)

Danielle performed a Phase I ESA on the 46-acre HP Palo Alto campus, which is comprised on nine buildings and other site improvements utilized for research and development. The scope of work included site walks, identifying environmental concerns, interviewing property owners and appropriate government officials, researching historical documents, and preparing reports in accordance with applicable ASTM and client standards.

Phase I Environmental Site Assessments, Various Locations (Associate Scientist)

Danielle has performed more than 400 Phase I ESAs, which includes site walks, identifying environmental concerns, interviewing property owners and appropriate government officials, researching historical documents, and preparing reports in accordance with applicable ASTM and client standards. Her Phase I experience includes the investigation of commercial and industrial businesses, office parks, truck terminals, retail gasoline stations, residential areas, and undeveloped land. Additionally, she has experience with the collection of drinking water samples for lead analysis and Radon sampling.

Phase I/II Environmental Site Assessments, Various Locations (Project Manager/Project Scientist)

Danielle is responsible for coordinating and managing all aspects of due diligence projects including budget tracking, proposal production, staff and client management, report review, and marketing. She also manages employees performing Phase I ESAs. She provided client management for a 73-site portfolio of Phase I ESAs, which were conducted by multiple nation-wide offices. Her project management responsibilities included coordinating site access, providing report template, technical review of reports, budget tracking, and invoicing.

Oil & Gas

Retail Gasoline Station Site Remediation, Various Locations (Portfolio Manager)

Danielle manages the Northern California portion for a national retail petroleum client program for Stantec, which includes 24 operating or former retail gasoline station sites that totaled $1.8M annually in gross revenue. Projects involved underground storage tank site characterizations and remedial investigations through closure. Responsibilities include budget management, permit compliance, senior review of deliverables, scheduling, staff management and development, interaction and compliance with regulatory agencies, and client support and management.

Waste (Solid/Hazardous Materials) Management

National Retail Petroleum Client, California and Nevada, (Project Manager)

As the Project Manager, Danielle is responsible for waste stream coordination and disposal of waste streams generated during UST system removal projects and UST investigations (i.e. groundwater sampling, drilling, assessment, remedial implementation, and site decommissioning). Tasks include pre-field coordination of onsite waste containers, onsite waste management, manifesting, resource scheduling, soil, groundwater, and waste sampling for laboratory analysis, and coordinating offsite disposal.

** denotes projects completed with other firms*

Corinne Ackerman PhD

Associate Scientist

Corinne has seven years of experience in the environmental consulting field including experimental design, data interpretation, verification and analysis, preparation of scopes of work and cost estimates, and technical report writing, as well as direct client support and client recommendations for field implementation. She is experienced in a wide range of environmental remediation techniques including both in-situ chemical oxidation (persulfate, permanganate, ozone, Fenton's reagent, peroxide) and enhanced bioremediation (nutrient and oxygen addition, as well as commercially prepared electron donors/acceptors) and bioaugmentation (addition of commercially available bacterial cultures). Projects involve bench testing of in-situ chemical oxidation for the removal of petroleum hydrocarbons, volatile organic compounds, chlorinated compounds, and other chemicals of concern from site soil and groundwater, as well as bench testing of bioremediation for the removal of contaminants.

Corinne has a strong background in most areas of soil science and extensive experience with various molecular techniques.

EDUCATION

BS, Environmental and Resource Science (With minors in Geology and Soil Science), University of California, Davis, California, 1999

MS, Agronomy (Soil Microbiology), Purdue University, West Lafayette, Indiana, 2001

PhD, Agronomy (Soil Microbiology), Purdue University, West Lafayette, Indiana, 2007

MEMBERSHIPS

Member, Groundwater Resources Association of California

Member, Crop Science Society of America

Member, American Society of Agronomy

Member, Soil Science Society of America

AWARDS

2003 Purdue Research Foundation Grant for Ph.D.

2002 Induction into Gamma Sigma Delta Honor Society of Agriculture

PROJECT EXPERIENCE

Soil and Groundwater Remediation Systems

Confidential Client* (Environmental Scientist)

Compared ozone and activated persulfate for the destruction of petroleum and chlorinated volatile organic compounds in soil and groundwater. Column tests were run to evaluate ozone since the soil to be treated was in the unsaturated zone. Activated sodium persulfate tests used soil and groundwater and compared the efficacy of unactivated persulfate and alkaline activated persulfate.

Wastewater

Confidential Client*

Developed and implemented traditional microbiological capabilities for an existing treatability lab for the evaluation of a novel method for wastewater sterilization

Regulatory Advice and Consultation

Various Sites* (Environmental Scientist)

Consulted directly with clients to develop customized scopes of work that meet specific site and regulatory concerns as well as budgetary requirements. Interpreted, and verified resulting study data and prepared technical reports of findings for bench tests that assessed the ability of ozone, persulfate, permanganate, or Fenton's reagent to destroy various contaminants including TPH, BTEX, fuel oxygenates, and chlorinated compounds. Testing included evaluation of contaminant removal, measurement of ozone, persulfate, or permanganate demand of soil, hydrogen peroxide or Fenton's reagent longevity in soil and groundwater, assessment of the effect of treatment on secondary water quality parameters, and assessment of the ability of Cr(VI) formed by treatment to attenuate within the treatment zone (once oxidation ceased) and downgradient of the treatment zone.

** denotes projects completed with other firms*

Elias A. Rashmawi

Managing Senior Principal, Urban & Brownfield Development

Elias Rashmawi brings nearly 25 years of unique experience in land development, Brownfield restoration, and complex program and construction management. He combines a distinctive in-depth expertise in multiple development elements, spanning master planning, funding, entitlement, permitting, and construction. As the Land Redevelopment Director of the highly successful and largest infill Brownfield project in the United States, Elias has demonstrated an exceptional level of success in configuring public-private partnerships and in navigating challenging planning, development and construction requirements for the delivery of various high profile projects. His start in the mid-eighties as a surface-groundwater numerical modeler of large watersheds followed by hands-on experience with confined high rise construction and land remediation in dense urban settings provided him a foundational synthesis between the theoretical and practical dimensions of development. When coupled with intensive years of experience in high level negotiations, programming, and management of trend–setting projects, Elias established himself as a unique asset to commercial and industrial owners, developers, public agencies, and contractors. Known for his vision and abilities to transform Brownfield liabilities into development assets, Rashmawi has been tasked with the comprehensive management of various remediation and infrastructure programs throughout his career.

EDUCATION

M.Sc. Civil Engineering (Water Resources emphasis, transferred to additional post graduate studies), University of California, Davis, University of California, Davis, California, 1988

Bachelor of Science Hydraulics of Water Systems, University of California, Davis, University of California Davis, California, 1986

REGISTRATIONS

Registered Environmental Assessor #07321, California Department of Toxic Substances Control, Registered Environmental Assessor Program

PROJECT EXPERIENCE

Brownfields

First California Containment Zone, Napa, California (Project Director)

Elias directed the remediation program at the first non-attainment containment zone designation in the State of California, originating from a chlorinated solvent plume at a Brownfield project in the City of Napa. Rather than disposing of over 10,000 tons of solvent-affected soils as California regulated hazardous waste and RCRA waste, Elias designed and secured approval for an alternative and cost-effective method. This project is utilized as a precedent case.

Downtown Sacramento Railyards*, Sacramento, California (Project Director)

As Director of Land Redevelopment at the Sacramento Railyards for seven years, Elias has been involved in all aspects of funding, planning, and development at this national iconic project. Leading multiple teams, Elias has been directly responsible for overseeing the delivery of various complex construction projects funded by Federal, State and local sources at approximately $300 million. Elias played a pivotal role in securing public grants funds from the Federal Stimulus packages, California 1B and 1C Bonds, CALReUSE, Local measures, and various agencies. He has negotiated and helped establish requirements spanning planning and design guidelines, tentative map conditions, mitigation management requirements, environmental, design, construction and closeout of various projects, including the relocation of freight and passenger tracks, the construction of several bridges and tunnels, roads, and high capacity deep utilities. Elias participated in the development of environmental documents on State and Federal levels, providing him with a unique understanding of the complex regulatory framework stipulated for the Railyards and similar Brownfields. He has led the regulatory negotiations with the State Department of Toxic Substances Control, the Central Valley Regional Water Quality Control Board, and the Sacramento Area Air Quality Management District. Rashmawi negotiated the remediation scope for the various projects, including the multifaceted environmental insurance cost-cap coverage that exceeds $100M in value.

** denotes projects completed with other firms*

Elias A. Rashmawi

Managing Senior Principal, Urban & Brownfield Development

Mixed-Use

El Monte Triangle Brownfield*, Sacramento, California (Project Manager)

Rashmawi assisted in devising a risk-based cleanup approach to mitigating vapor and dissolved phase contamination in multiple sites in a blighted region in north Sacramento, California. The approach entailed significant analysis of vapor and soluble contaminant fate and transport and the implementation of innovative cleanup methodologies; institutional and engineering measures to secure the potential for mixed use developments. In addition to various private entities, the project involved collaboration between the Sacramento Housing and Redevelopment Agency, the City of Sacramento, and the Central Valley Regional Water Quality Control Board.

Fruitvale Transit Village*, Oakland, California (Project Manager)

Managed and executed complex front-end environmental tasks that were required for the development of the Fruitvale Transit Village in the City of Oakland, considered as one of the most unique mixed-use developments in the nation and is nationally recognized as a leading smart-growth initiative. Project implementation required a land swap that included a Union Pacific railroad section, transformation of a Bay Area Rapid Transit District (BART) parking area into mixed use, the re-design of several City infrastructure features and the realignment of roads. The project entailed the combined collaborative efforts of the Fruitvale Development Corporation (FDC), BART, Union Pacific, City of Oakland, various state regulatory agencies, and the surrounding community as the primary stakeholders.

Soil and Groundwater Remediation Systems

Wax Museum*, San Francisco, California (Project Manager)

This is one of San Francisco's Pier 39 main attractions. The old wax museum was scheduled to be demolished and a highly attractive architectural design was to be erected. The combination of groundwater intrusion into the subsurface and the existence of subsurface contamination required the implementation of a plan that would allow construction to proceed without delays. An innovative method of bank excavation, shoring, and prevention of groundwater intrusion allowed rapid excavation, disposal and construction activities. Despite the presence of the project in a dense urban and prime tourist area in the City of San Francisco, the development went unhampered and was completed at significant savings in groundwater control, excavation, transportation, disposal costs.

Former F.C.L.L Property, Albertson's Food Store*, Napa, California (Project Manager)

Rashmawi directed the remediation program of a soil and groundwater chlorinated solvent plume at a Brownfield project in the City of Napa, California. Instead of disposing of nearly 10,000 tons of solvent-affected soils at as California regulated hazardous waste and RCRA waste, as recommended by others, also causing import of off-site soil to achieve desired grading, Rashmawi designed and secured approval for an alternative method to maintain all soil on-site while also capturing groundwater plume. As a result, this project received the first containment zone designation in the State of California and is currently utilized as a precedent case. The site is currently a major retail shopping center and mixed use commercial and residential development. Cleanup was less than 30% of the projected cost of the more traditional method of off-site disposal, estimated at several millions.

Soil and Water Quality Assessments

Various Residential & Mixed-Use Towers*, San Francisco, California (Project Manager)

Through appropriate sampling, characterization and profiling approaches, soil removal for the purpose of meeting foundation requirements of high rise residential buildings were completed for various high profile residential developments in the central part of the City of San Francisco and South of Market areas. The characterization, soil transport and disposal approaches depended on the accurate evaluation and stratification of soil conditions as a result of implementing a cost-saving comprehensive profile sampling protocol.

** denotes projects completed with other firms*

Elias A. Rashmawi

Managing Senior Principal, Urban & Brownfield Development

Soil Quality Assessment

Former Dow Corning Roofing Shingles Facility*, San Leandro, California (Project Manager)

Rashmawi directed the cleanup of thousands of cubic yards of impacted surface soils at a former roofing shingles manufacturing facility. The soil was impacted with a variety of contaminants spanning petroleum hydrocarbons, semi volatile and volatile organic compounds and heavy metals. Significant and prohibitive mitigation and cleanup measures were required by various regulatory agencies prior to developing the property into a commercial center. Rashmawi developed a technologically innovative remediation approach that coupled groundwater protection with construction and commercial worker protection. The result was significant cost reduction and high efficiency by securing cleanup and required grading simultaneously.

Soil Toxicity / Contaminated Soil Evaluation

Former Battery Manufacturing Facility*, San Francisco, California (Project Manager)

Operations of a former battery manufacturing facility were discovered in the crawl space of a corner office building in the City of San Francisco. Significant contamination of heavy metals and volatile organics were reported. Renovation and sale plans for the property were underway. A risk-based corrective action approach was instituted and a remediation plan that maintained the presence of the current structure, as was desired, was implemented. Rather than demolishing the building, the floor was sequentially removed to allow access to the subsurface. Innovative remedial measures were implemented under the oversight of the relevant regulatory agency. The property was developed into a live-work building with minimal cost.

Vapor Intrusion Modeling and Risk Assessments

Las Bougainvilleas Affordable Housing*, Oakland, California (Project Manager)

Following a recommendation by others for significant cleanup measures at an affordable housing project, Rashmawi completed a site-specific vapor analysis and risk assessment that presented an alternative approach. The San Francisco Bay Area Regional Water Quality Control Board, the state regulatory oversight agency for the project, adopted the recommended approach. As a result, the award-winning community development project went forward without delays or additional costs.

** denotes projects completed with other firms*

Elias A. Rashmawi

Managing Senior Principal, Urban & Brownfield Development

PUBLICATIONS

Stochastic water quality modeling and numerical groundwater simulation for the lower San Joaquin River Basin. *Report to the State Water Resources Control Board.*, 1992.

Data Refinements and Modeling Results for the Lower San Joaquin River Basin. *A Report to The State Water Resources Control Board from the University of California, Davis, 101 pages.*, 1989.

An input-output model of the San Joaquin River from Lander Avenue to Vernalis. *California State Water Resources Control Board*, 1987.

Groundwater flows to the San Joaquin River. *Cal. Agriculture*, 1987.

Appendix C USER PROVIDED RECORDS

Stantec

PHASE I ESA USER'S QUESTIONNAIRE

In order to qualify for protection from land owner liability under CERCLA as an *innocent landowner, bona fide prospective purchaser,* or *contiguous property owner*, ASTM standard practice E1527-13 and the federal AAI rule (40 CFR 312) require that the User of the Phase I ESA report provide certain information (if available) to the Environmental Professional completing the assessment. Failure to provide this information could result in a determination that "all appropriate inquiry" is not complete. Information that is not or cannot be provided to the Environmental Professional may be identified as a "data gap" in the Phase I ESA report.

Please answer the following questions as completely as possible. Attach additional pages as needed. Return the completed questionnaire to Stantec.

1. Property Information

Property Name: 700 Crocker

Property Address: 700 Crocker Drive

City: Vacaville State CA Zip 95688

Property Owner Name: LDK Ventures, LLC

Property Owner Phone #: 916.965.7100

2. Key Site Manager
This should be an individual with good knowledge of the uses and physical characteristics of the property, and the processes or activities currently conducted at the property. Often this will be the property manager, chief physical plant supervisor, or head maintenance person.

Name: Howard Faulkner

Company/Organization/Title: _____

Phone # 707-446-5925 E-Mail Address: howard.faulkner@savemart.com

3. Contact For Site Access (*if different from Key Site Manager)*

Name: Same as above

Company/Organization/Title: _____

Phone # _____ E-Mail Address: _____

4. Environmental Cleanup Liens. Are you aware of any environmental cleanup liens against the property that are filed or recorded under federal, tribal, state or local law?

_____ Yes X No

If yes, describe or attach details of the lien _____

5. Activity and Land Use Limitations. Are you aware of any activity and use limitations, such as engineering controls, land use restrictions, or institutional controls that are in place at the property and/or have been filed or recorded as applicable to the property as a result of environmental contamination, investigation, cleanup, or related matters?

_____ Yes _____X____ No

If yes, describe or attach details of the limitations_____

_____

6. Specialized Knowledge or Experience. As the User of this ESA, 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, such that you would have specialized knowledge about chemicals and processes used by this type of business?

_____ Yes _____X___ No

If yes, describe or attach details of your specialized knowledge or experience_____

_____

7. Relationship of Purchase Price to Fair Market Value of Property. Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, do you have any reason to believe that the reduced purchase price may be related to contamination known or believed to be present at the property?

_____ Yes, I have reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____X_____ No, I have no reason to believe that the purchase price for the property has been reduced in comparison with the fair market value due to contamination known or believed to be present at the property?

_____ Not applicable. User is not involved in a purchase or sale of the property.

8. Commonly Known or Reasonably Ascertainable Information. Are you aware of commonly known or reasonably ascertainable information about the property that would help the Environmental Professional to identify conditions indicative of releases or threatened releases of hazardous substances or petroleum products? For example:

Do you know the past uses of the property?
_____ Yes (describe) __Warehouse_____and storage_____
_____ No

Do you know of chemicals, hazardous substances or petroleum products that are present or once were present at the property?
_____ Yes (describe) _____Underground fuel storage tanks which have been removed other materials may have been used on site, no knowledge of this.
_ _____ No

Do you know of spills or other releases of chemicals, hazardous substances or petroleum products that have taken place at the property?
_____ Yes (describe) _____
_____Not aware of any_____
_____ No

Stantec

Do you know of any environmental cleanups that have taken place at the property?
_____ Yes (describe) _____
_____Tank Pull_____
_____ No

9. The Degree of Obviousness of Contamination. E1527-05 and the federal AAI rule (40 CFR 312.31) require that the Phase I ESA consider the degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation. Based on your knowledge and experience related to the property, are there any *obvious* indictors that point to the presence or likely presence of contamination at the property?
_____ Yes (describe) _____
_____
_____XX__ No

10. Availability of Previous Environmental Reports. Are you aware of previous environmental site assessment reports, other environmental reports, documents, correspondence, etc. concerning the property and its environmental condition?
___X_____ Yes (please identify and provide copies, if available) __Reports received from seller have been delivered to Stantec
_____
_____ No

Signature: _____

Name (printed): Alan Hersh

Company: ADK Ventures LLC

Title: Sr VP

Date: 6/1/17

We have been under contract for 2 days and have very limited knowledge of the site. Alan Hersh

Chicago Title Company

2150 John Glenn Dr, Suite 400, , Concord, CA 94520
Phone: (925) 288-8000 ● Fax:

Issuing Policies of Chicago Title Insurance Company

Order No.: 35604115-356-AW-JM

Title Officer: Jeff Martin

TO:

Chicago Title Company
455 Market Street, Suite 2100
San Francisco, CA 94105
(415) 788-0871
(415) 896-9423

Escrow Officer: Anne Wirtanen
455 Market Street, Suite 2100
San Francisco, CA 94105
(415) 788-0871
(415) 896-9423

ATTN: **Anne Wirtanen**

PROPERTY ADDRESS: 700 Crocker Drive, Vacaville, CA

PRELIMINARY REPORT

In response to the application for a policy of title insurance referenced herein, ***Chicago Title Company*** *hereby reports that it is prepared to issue, or cause to be issued, as of the date hereof, a policy or policies of title insurance describing the land and the estate or interest therein hereinafter set forth, insuring against loss which may be sustained by reason of any defect, lien or encumbrance not shown or referred to as an exception herein or not excluded from coverage pursuant to the printed Schedules, Conditions and Stipulations or Conditions of said policy forms.*

The printed Exceptions and Exclusions from the coverage and Limitations on Covered Risks of said policy or policies are set forth in Attachment One. The policy to be issued may contain an arbitration clause. When the Amount of Insurance is less than that set forth in the arbitration clause, all arbitrable matters shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. Limitations on Covered Risks applicable to the CLTA and ALTA Homeowner's Policies of Title Insurance which establish a Deductible Amount and a Maximum Dollar Limit of Liability for certain coverages are also set forth in Attachment One. Copies of the policy forms should be read. They are available from the office which issued this report.

This report (and any supplements or amendments hereto) is issued solely for the purpose of facilitating the issuance of a policy of title insurance and no liability is assumed hereby. If it is desired that liability be assumed prior to the issuance of a policy of title insurance, a Binder or Commitment should be requested.

The policy(s) of title insurance to be issued hereunder will be policy(s) of Chicago Title Insurance Company, a Florida corporation.

Please read the exceptions shown or referred to herein and the exceptions and exclusions set forth in Attachment One of this report carefully. The exceptions and exclusions are meant to provide you with notice of matters which are not covered under the terms of the title insurance policy and should be carefully considered.

It is important to note that this preliminary report is not a written representation as to the condition of title and may not list all liens, defects and encumbrances affecting title to the land.

Chicago Title Company

By: _____
Authorized Signature

By: _____
Randy Quirk, President

Attest: _____
Michael Gravelle, Secretary

Chicago Title Company

2150 John Glenn Dr, Suite 400, , Concord, CA 94520
Phone: (925) 288-8000 ● Fax:

PRELIMINARY REPORT

EFFECTIVE DATE: **May 9, 2017 at 7:30 a.m.**

ORDER NO.: 35604115-356-AW-JM

The form of policy or policies of title insurance contemplated by this report is:

ALTA Extended Owners Policy (6-17-06)
ALTA Extended Loan Policy (6-17-06)

1. THE ESTATE OR INTEREST IN THE LAND HEREINAFTER DESCRIBED OR REFERRED TO COVERED BY THIS REPORT IS:

   A Fee as to Parcel(s) One; Easement(s) more fully described below as to Parcel(s) Two

2. TITLE TO SAID ESTATE OR INTEREST AT THE DATE HEREOF IS VESTED IN:

   Lucky (Fla) NoCal Investor LLC, a Delaware limited liability company which acquired title in part as Luck (Fla) NoCal Investor LLC

3. THE LAND REFERRED TO IN THIS REPORT IS DESCRIBED AS FOLLOWS:

   See Exhibit A attached hereto and made a part hereof.

EXHIBIT A
LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE CITY OF VACAVILLE, IN THE COUNTY OF SOLANO, STATE OF CALIFORNIA, AND IS DESCRIBED AS FOLLOWS:

Parcel One:

Parcel "A-1" of the Lot Line Adjustment No. 06-07, recorded December 22, 2006 as Instrument No. 2006-162305, Official Records, also being all of Parcel "A", and a portion of Parcel "B" as shown on that certain Parcel Map filed for record January 17, 1978 in Book 14 of Parcel Maps at Page 59 in the office of the Solano County Recorder described as follows:

Beginning at the Southeasterly corner of said Parcel "A"; thence along the Southerly and Westerly lines of said Parcel "A" the following six courses;

North 83°57'35" West, 1228.26 feet; thence South 20°32'15" West, 320.95 feet to a non-tangent curve concave Southwesterly having a radius of 415.74 feet, from which point the radius bears South 79°22'17" West; thence Northwesterly along the arc of said curve a distance of 200.63 feet through a central angle of 27°39'00"; thence North 38°16'43" West, 100.00 feet to a tangent curve concave Northeasterly having a radius of 367.24 feet; thence Northwesterly along the arc of said curve a distance of 249.32 feet through a central angle of 38°53'54"; thence North 00°37'11" East, 187.60 feet to the Southwesterly corner of said Parcel "B"; thence along the Westerly line of said Parcel "B" the following five courses; North 00°37'11" East, 1137.02 feet; thence North 89°22'49" West, 48.50 feet; thence North 00°37'11" East, 110.00 feet to a non-tangent curve concave Northwesterly having a radius of 80.00 feet, from which point the radius bears North 13°51'28" West; thence Northeasterly along the arc of said curve a distance of 105.34 feet through a central angle of 75°26'42"; thence North 00°41'50" East, 69.17 feet; thence leaving last said Westerly line South 79°34'25" East, 350.72 feet to a point on the Northwesterly corner of said Parcel "A"; thence along the Northerly and Easterly lines of said Parcel "A" the following eight courses; South 79°34'25" East, 840.53 feet; thence North 10°25'35" East, 120.05 feet; thence South 79°34'25" East, 112.62 feet; thence North 10°33'00" East, 460.75 feet; thence South 81°24'00" East, 407.36 feet; thence South 08°36'00" West, 632.55 feet; thence South 52°34'25" East, 129.06 feet; thence South 10°25'35" West, 1495.45 feet to the point of beginning.

Excepting therefrom, an undivided 1/2 interest in all minerals, mineral deposits, oil, gas and other hydrocarbon substances of every kind and character below 500 feet from the surface of said land, but without however, the right of surface entry, as excepted and reserved in deeds from Gertrude M. Eames to Margaret Josephine Shellhammer, dated June 8, 1956, recorded in the office of said recorder on June 19, 1956, in Book 835 of Official Records, Page 1, and dated October 5, 1961, recorded in the office of said recorder on January 19, 1962 in Book 1119 of Official Records, Page 525.

Parcel Two:

A non-exclusive easement for ingress and egress as conveyed in that certain Agreement and Grant of Easements, recorded February 22, 1978 in Book 1978, Page 13102, Instrument No. 7827, of Official Records.

APN: **0106-240-350**

EXCEPTIONS

AT THE DATE HEREOF, ITEMS TO BE CONSIDERED AND EXCEPTIONS TO COVERAGE IN ADDITION TO THE PRINTED EXCEPTIONS AND EXCLUSIONS IN SAID POLICY FORM WOULD BE AS FOLLOWS:

1. Property taxes, which are a lien not yet due and payable, including any assessments collected with taxes to be levied for the fiscal year 2017-2018.

2. Prior to closing, Escrow must contact the SOLANO County Tax Collector's Office (707-784-7485) to confirm all amounts owing, including current fiscal year taxes, supplemental taxes, escaped assessments and any delinquencies.

3. The lien of supplemental or escaped assessments of property taxes, if any, made pursuant to the provisions of Chapter 3.5 (commencing with Section 75) or Part 2, Chapter 3, Articles 3 and 4, respectively, of the Revenue and Taxation Code of the State of California as a result of the transfer of title to the vestee named in Schedule A or as a result of changes in ownership or new construction occurring prior to Date of Policy.

4. Any taxes, assessments or charges levied by the following agency. Amounts due, if any, may be ascertained by contacting the agency.

   City of Vacaville municipal refuse (garbage) charges, 707-448-2945

5. Water rights, claims or title to water, whether or not disclosed by the public records.

6. Consequences of the fact that the exact location of the insured easement reflected as Parcel Two in Exhibit A cannot be located with certainty from the Public Records.

7. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Pacific Gas and Electric Company, a California corporation
Purpose:	Electrical facilities and communication facilities
Recording Date:	February 25, 1946
Recording No:	Book 337, Page 373, of Official Records
Affects:	Southerly portion

   Limitations on the use, by the owners of said Land, of the easement area as set forth in the easement document shown hereinabove.

   Reference is hereby made to said document for full particulars.

8. The ownership of said Land does not include rights of access to or from the street, highway, or freeway abutting said Land, such rights having been relinquished by the document,

Recording Date:	May 23, 1946
Recording No:	Book 344, Page 162, of Official Records

   Reference is hereby made to said document for full particulars.

9. Waiver of any claims for damages to said Land by reason of the location, construction, landscaping or maintenance of the street or highway adjoining said Land, as contained in the deed to

County/City/State:	State of California
Recording Date:	May 23, 1946
Recording No.:	Book 344, Page 162, of Official Records

EXCEPTIONS
(Continued)

Reference is hereby made to said document for full particulars.

10. The ownership of said Land does not include rights of access to or from the street, highway, or freeway abutting said Land, such rights having been relinquished by the document,

    Recording Date: September 13, 1946
    Recording No: Book 350, Page 245, of Official Records

    Reference is hereby made to said document for full particulars.

11. Waiver of any claims for damages to said Land by reason of the location, construction, landscaping or maintenance of the street or highway adjoining said Land, as contained in the deed to

    County/City/State: State of California
    Recording Date: September 13, 1946
    Recording No: Book 350, Page 245, of Official Records

    Reference is hereby made to said document for full particulars.

12. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: Pacific Gas and Electric Company, a California corporation
    Purpose: Electrical facilities and communication facilities
    Recording Date: August 24, 1953
    Recording No: 13565, Book 682, Page 562, of Official Records
    Affects: Southerly portion

    Limitations on the use, by the owners of said Land, of the easement area as set forth in the easement document shown hereinabove.

    Reference is hereby made to said document for full particulars.

13. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

    Granted to: The Pacific Telephone and Telegraph Company
    Purpose: Communication facilities
    Recording Date: April 07, 1966
    Recording No: 9661, Book 1392, Page 3, of Official Records
    Affects: Easterly portion

    Limitations on the use, by the owners of said Land, of the easement area as set forth in the easement document shown hereinabove.

    Reference is hereby made to said document for full particulars.

14. The ownership of said Land does not include rights of access to or from the street, highway, or freeway abutting said Land, such rights having been relinquished by the document,

    Recording Date: August 31, 1972
    Recording No: 20068, Book 1773, Page 306, of Official Records
    Affects: Easterly portion

    Reference is hereby made to said document for full particulars.

EXCEPTIONS
(Continued)

15. Waiver of any claims for damages to said Land by reason of the location, construction, landscaping or maintenance of the street or highway adjoining said Land, as contained in the deed to

County/City/State:	State of California
Recording Date:	August 31, 1972
Recording No.:	20068, Book 1773, Page 306, of Official Records

Reference is hereby made to said document for full particulars.

16. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	State of California
Purpose:	Drainage
Recording Date:	August 31, 1972
Recording No:	20068, Book 1773, Page 306, of Official Records
Affects:	Easterly portion

Reference is hereby made to said document for full particulars.

17. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Southern Pacific Transportation Company, a Delaware corporation
Purpose:	Railroad, transportation and communication
Recording Date:	August 23, 1976
Recording No:	29429, Book 1976, Page 47918, of Official Records
Affects:	Westerly portion

Reference is hereby made to said document for full particulars.

18. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	Pacific Gas and Electric Company, a California corporation
Purpose:	Electrical facilities
Recording Date:	September 22, 1976
Recording No:	33027, Book 1976, Page 53716, of Official Records
Affects:	Westerly portion and Southerly portion

Limitations on the use, by the owners of said Land, of the easement area as set forth in the easement document shown hereinabove.

Reference is hereby made to said document for full particulars.

19. Easement(s) for the purpose(s) shown below and rights incidental thereto, as delineated on or as offered for dedication on

Map/Plat:	Book 11 of Parcel Maps at Page 86
Recording Date:	December 16, 1976
Purpose:	Sewer and water
Affects:	Southerly portion

20. Notes, Recitals, Legends and/or Conditions as contained on the map filed December 16, 1976 in Book 11 of Parcel Maps at Page 86.

EXCEPTIONS
(Continued)

21. Matters contained in that certain document

Entitled:	Corporation Grant Deed
Dated:	December 13, 1976
Executed by:	Crocker Land Company (formerly Foremost-McKesson, Inc., a Maryland corporation, successor by merger to Crocker Estate Company, a California corporation)
Recording Date:	December 16, 1976
Recording No:	44048, Book 1976, Page 71467, of Official Records

Reference is hereby made to said document for full particulars.

22. Covenants, conditions and restrictions but omitting any covenants or restrictions, if any, including but not limited to those based upon race, color, religion, sex, sexual orientation, familial status, marital status, disability, handicap, national origin, citizenship, immigration status, primary language, ancestry, source of income, gender, gender identity, gender expression, medical condition or genetic information, as set forth in applicable state or federal laws, except to the extent that said covenant or restriction is permitted by applicable law, as set forth in the document

Recording Date:	December 16, 1976
Recording No:	44048, Book 1976, Page 71467, of Official Records

Said covenants, conditions and restrictions provide that a violation thereof shall not defeat the lien of any mortgage or deed of trust made in good faith and for value.

23. Easement(s) for the purpose(s) shown below and rights incidental thereto as reserved in a document;

Reserved by:	Crocker Land Company (formerly Foremost-McKesson, Inc., a Maryland corporation, successor by merger to Crocker Estate Company, a California corporation)
Purpose:	Sewer and water
Recording Date:	December 16, 1976
Recording No:	44048, Book 1976, Page 71467, of Official Records
Affects:	Southerly portion

Reference is hereby made to said document for full particulars.

24. Easement(s) for the purpose(s) shown below and rights incidental thereto as reserved in a document;

Reserved by:	Marydoug, Inc., a California corporation
Purpose:	Railroad and transportation
Recording Date:	February 22, 1978
Recording No:	7826, Book 1978, Page 13099, of Official Records
Affects:	Westerly portion

Reference is hereby made to said document for full particulars.

EXCEPTIONS
(Continued)

25. Matters contained in that certain document

Entitled:	Agreement and Grant of Easements
Dated:	February 17, 1978
Executed by:	Marydoug, Inc., a California corporation and LKS Properties, a California corporation
Recording Date:	February 22, 1978
Recording No:	7827, Book 1978, Page 13102, of Official Records

Reference is hereby made to said document for full particulars.

26. Easement(s) for the purpose(s) shown below and rights incidental thereto as set forth in a document:

Purpose:	Ingress and egress
Recording Date:	February 22, 1978
Recording No:	7827, Book 1978, Page 13102, of Official Records

The exact location and extent of said easement is not disclosed of record.

Reference is hereby made to said document for full particulars.

27. Notes, Recitals, Legends and/or Conditions as contained on the map filed January 17, 1978 in Book 14 of Parcel Maps at Page 59.

28. The fact that said Land is included within a project area of the Redevelopment Agency shown below, and that proceedings for the redevelopment of said project have been instituted under the Redevelopment Law (such redevelopment to proceed only after the adoption of the redevelopment plan) as disclosed by a document.

Redevelopment Agency:	Vacaville I-505/80 Redevelopment Project of the City of Vacaville, as adopted on July 12, 1983, under Ordinance No. 1188.
Recording Date:	July 15, 1983
Recording No.:	Instrument No. 29527, Book 1983, Page 55732, of Official Records.

29. Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to:	City of Vacaville, a municipal corporation
Purpose:	Sanitary sewer and water facilities
Recording Date:	January 06, 2004
Recording No:	200400001151, of Official Records
Affects:	Southerly portion

Reference is hereby made to said document for full particulars.

EXCEPTIONS
(Continued)

30. A deed of trust to secure an indebtedness in the amount shown below,

Amount:	$360,000,000.00
Dated:	September 15, 2008
Trustor/Grantor	Lucky (Fla) NoCal Investor LLC, a Delaware limited liability company
Trustee:	First American Title Company, a California corporation
Beneficiary:	Wells Fargo Retail Finance, LLC, a Delaware limited liability company
Loan No.:	None Shown
Recording Date:	September 16, 2008
Recording No:	200800074925, of Official Records

31. Any rights of the parties in possession of a portion of, or all of, said Land, which rights are not disclosed by the public records.

    The Company will require, for review, a full and complete copy of any unrecorded agreement, contract, license and/or lease, together with all supplements, assignments and amendments thereto, before issuing any policy of title insurance without excepting this item from coverage.

    The Company reserves the right to except additional items and/or make additional requirements after reviewing said documents.

32. Matters which may be disclosed by an inspection and/or by a correct ALTA/NSPS Land Title Survey of said Land that is satisfactory to the Company, and/or by inquiry of the parties in possession thereof.

33. The Company will require an ALTA/NSPS LAND TITLE SURVEY. If the owner of the Land the subject of this transaction is in possession of a current ALTA/NSPS LAND TITLE SURVEY, the Company will require that said survey be submitted for review and approval; otherwise, a new survey, satisfactory to the Company, must be prepared by a licensed land surveyor and supplied to the Company prior to the close of escrow.

    The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

EXCEPTIONS
(Continued)

34. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below:

Limited Liability Company: Lucky (Fla) NoCal Investor LLC, a Delaware limited liability company which acquired title in part as Luck (Fla) NoCal Investor LLC

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps

c) If the Limited Liability Company is member-managed, a full and complete current list of members certified by the appropriate manager or member

d) A current dated certificate of good standing from the proper governmental authority of the state in which the entity was created

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

35. The Company will require the following documents for review prior to the issuance of any title insurance predicated upon a conveyance or encumbrance from the entity named below:

Limited Liability Company: Lucky Mezzanine LLC, a Delaware limited liability company

a) A copy of its operating agreement, if any, and any and all amendments, supplements and/or modifications thereto, certified by the appropriate manager or member

b) If a domestic Limited Liability Company, a copy of its Articles of Organization and all amendments thereto with the appropriate filing stamps

c) If the Limited Liability Company is member-managed, a full and complete current list of members certified by the appropriate manager or member

d) A current dated certificate of good standing from the proper governmental authority of the state in which the entity was created

e) If less than all members, or managers, as appropriate, will be executing the closing documents, furnish evidence of the authority of those signing.

The Company reserves the right to add additional items or make further requirements after review of the requested documentation.

EXCEPTIONS
(Continued)

36. The Company will require that an Owner's Affidavit be completed by the party(s) named below before the issuance of any policy of title insurance.

    Party(s): Lucky (Fla) NoCal Investor LLC, a Delaware limited liability company which acquired title in part as Luck (Fla) NoCal Investor LLC

    The Company reserves the right to add additional items or make further requirements after review of the requested Affidavit.

37. Prior to the close of escrow and the issuance of an ALTA Coverage Policy, an inspection of the property will be required.

38. The requirement that the complete and correct name(s) of the buyer(s) in this transaction be submitted to the Title Department at least 5 days prior to the close of Escrow.

39. The transaction contemplated in connection with this Report is subject to the review and approval of the Company's Corporate Underwriting Department. The Company reserves the right to add additional items or make further requirements after such review.

END OF EXCEPTIONS

NOTES

1. None of the items shown in this report will cause the Company to decline to attach CLTA Endorsement Form 100 to an Extended Coverage Loan Policy, when issued.

2. Note: The Company is not aware of any matters which would cause it to decline to attach CLTA Endorsement Form 116 indicating that there is located on said Land Commercial Improvements, known as 700 Crocker Drive, Vacaville, CA, to an Extended Coverage Loan Policy.

3. Note: The name(s) of the proposed insured(s) furnished with this application for title insurance is/are:

   No names were furnished with the application. Please provide the name(s) of the buyers as soon as possible.

4. Note: Property taxes for the fiscal year shown below are PAID. For proration purposes the amounts were:

Tax Identification No.:	0106-240-350
Fiscal Year:	2016-2017
1st Installment:	$249,828.72
2nd Installment:	$249,828.72
Exemption:	$0.00
Land:	$6,341,000.00
Improvements:	$30,959,000.00
Personal Property:	$1,044,371.00
Fixtures:	$2,464,917.00
Code Area:	006068
Bill No.:	10624035001

5. Note: There are NO conveyances affecting said Land recorded within 24 months of the date of this report.

6. Note: The charge for a policy of title insurance, when issued through this application for title insurance, will be based on the Short Term Rate.

7. Furnish recording instructions with the documents to be recorded in this transaction. Said instructions must address each requirement made herein, list any endorsements to be issued with the policy and specify the recording order of any documents furnished.

   The Company reserves the right to add additional items or make further requirements after review of the requested instructions prior to recording the documents or issuing any requested endorsement.

   The Company also reserves the right to charge any applicable additional fees for any endorsement requested.

8. Your application for title insurance was placed by reference to only a street address or tax identification number. Based on our records, we believe that the legal description in this report covers the parcel(s) of Land that you requested. If the legal description is incorrect, the seller/borrower must notify the Company and/or the settlement company in order to prevent errors and to be certain that the correct parcel(s) of Land will appear on any documents to be recorded in connection with this transaction and on the policy of title insurance.

NOTES
(Continued)

9. Note: If a county recorder, title insurance company, escrow company, real estate broker, real estate agent or association provides a copy of a declaration, governing document or deed to any person, California law requires that the document provided shall include a statement regarding any unlawful restrictions. Said statement is to be in at least 14-point bold face type and may be stamped on the first page of any document provided or included as a cover page attached to the requested document. Should a party to this transaction request a copy of any document reported herein that fits this category, the statement is to be included in the manner described.

10. Note: Any documents being executed in conjunction with this transaction must be signed in the presence of an authorized Company employee, an authorized employee of an agent, an authorized employee of the insured lender, or by using Bancserv or other approved third-party service. If the above requirement cannot be met, please call the Company at the number provided in this report.

11. Note: The policy of title insurance will include an arbitration provision. The Company or the insured may demand arbitration. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the insured arising out of or relating to this policy, any service of the Company in connection with its issuance or the breach of a policy provision or other obligation. Please ask your escrow or title officer for a sample copy of the policy to be issued if you wish to review the arbitration provisions and any other provisions pertaining to your Title Insurance coverage.

END OF NOTES

Jeff Martin/mv1

FIDELITY NATIONAL FINANCIAL

PRIVACY NOTICE

At Fidelity National Financial, Inc., we respect and believe it is important to protect the privacy of consumers and our customers. This Privacy Notice explains how we collect, use, and protect any information that we collect from you, when and to whom we disclose such information, and the choices you have about the use of that information. A summary of the Privacy Notice is below, and we encourage you to review the entirety of the Privacy Notice following this summary. You can opt-out of certain disclosures by following our opt-out procedure set forth at the end of this Privacy Notice.

Types of Information Collected. You may provide us with certain personal information about you, like your contact information, address demographic information, social security number (SSN), driver's license, passport, other government ID numbers and/or financial information. We may also receive browsing information from your Internet browser, computer and/or mobile device if you visit or use our websites or applications.	**How Information is Collected.** We may collect personal information from you via applications, forms, and correspondence we receive from you and others related to our transactions with you. When you visit our websites from your computer or mobile device, we automatically collect and store certain information available to us through your Internet browser or computer equipment to optimize your website experience.
Use of Collected Information. We request and use your personal information to provide products and services to you, to improve our products and services, and to communicate with you about these products and services. We may also share your contact information with our affiliates for marketing purposes.	**When Information Is Disclosed.** We may disclose your information to our affiliates and/or nonaffiliated parties providing services for you or us, to law enforcement agencies or governmental authorities, as required by law, and to parties whose interest in title must be determined.
Choices With Your Information. Your decision to submit information to us is entirely up to you. You can opt-out of certain disclosure or use of your information or choose to not provide any personal information to us.	**Information From Children.** We do not knowingly collect information from children who are under the age of 13, and our website is not intended to attract children.
Privacy Outside the Website. We are not responsible for the privacy practices of third parties, even if our website links to those parties' websites.	**International Users.** By providing us with you information, you consent to its transfer, processing and storage outside of your country of residence, as well as the fact that we will handle such information consistent with this Privacy Notice.
The California Online Privacy Protection Act. Some FNF companies provide services to mortgage loan servicers and, in some cases, their websites collect information on behalf of mortgage loan servicers. The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through those websites.	
Your Consent To This Privacy Notice. By submitting information to us or by using our website, you are accepting and agreeing to the terms of this Privacy Notice.	**Access and Correction; Contact Us.** If you desire to contact us regarding this notice or your information, please contact us at privacy@fnf.com or as directed at the end of this Privacy Notice.

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FIDELITY NATIONAL FINANCIAL, INC.
PRIVACY NOTICE

Fidelity National Financial, Inc. and its majority-owned subsidiary companies providing title insurance, real estate- and loan-related services (collectively, "FNF", "our" or "we") respect and are committed to protecting your privacy. We will take reasonable steps to ensure that your Personal Information and Browsing Information will only be used in compliance with this Privacy Notice and applicable laws. This Privacy Notice is only in effect for Personal Information and Browsing Information collected and/or owned by or on behalf of FNF, including Personal Information and Browsing Information collected through any FNF website, online service or application (collectively, the "Website").

Types of Information Collected
We may collect two types of information from you: Personal Information and Browsing Information.

Personal Information. FNF may collect the following categories of Personal Information:
- contact information (e.g., name, address, phone number, email address);
- demographic information (e.g., date of birth, gender, marital status);
- social security number (SSN), driver's license, passport, and other government ID numbers;
- financial account information; and
- other personal information needed from you to provide title insurance, real estate- and loan-related services to you.

Browsing Information. FNF may collect the following categories of Browsing Information:
- Internet Protocol (or IP) address or device ID/UDID, protocol and sequence information;
- browser language and type;
- domain name system requests;
- browsing history, such as time spent at a domain, time and date of your visit and number of clicks;
- http headers, application client and server banners; and
- operating system and fingerprinting data.

How Information is Collected
In the course of our business, we may collect *Personal Information* about you from the following sources:
- applications or other forms we receive from you or your authorized representative;
- the correspondence you and others send to us;
- information we receive through the Website;
- information about your transactions with, or services performed by, us, our affiliates or nonaffiliated third parties; and
- information from consumer or other reporting agencies and public records maintained by governmental entities that we obtain directly from those entities, our affiliates or others.

If you visit or use our Website, we may collect *Browsing Information* from you as follows:
- Browser Log Files. Our servers automatically log each visitor to the Website and collect and record certain browsing information about each visitor. The Browsing Information includes generic information and reveals nothing personal about the user.
- Cookies. When you visit our Website, a "cookie" may be sent to your computer. A cookie is a small piece of data that is sent to your Internet browser from a web server and stored on your computer's hard drive. When you visit a website again, the cookie allows the website to recognize your computer. Cookies may store user preferences and other information. You can choose whether or not to accept cookies by changing your Internet browser settings, which may impair or limit some functionality of the Website.

Use of Collected Information
Information collected by FNF is used for three main purposes:
- To provide products and services to you or any affiliate or third party who is obtaining services on your behalf or in connection with a transaction involving you.
- To improve our products and services.
- To communicate with you and to inform you about our, our affiliates' and third parties' products and services, jointly or independently.

When Information Is Disclosed
We may provide your Personal Information (excluding information we receive from consumer or other credit reporting agencies) and Browsing Information to various individuals and companies, as permitted by law, without obtaining your prior authorization. Such laws do not allow consumers to restrict these disclosures. Please see the section "Choices With Your Personal Information" to learn how to limit the discretionary disclosure of your Personal Information and Browsing Information.

Disclosures of your Personal Information may be made to the following categories of affiliates and nonaffiliated third parties:
- to third parties to provide you with services you have requested, and to enable us to detect or prevent criminal activity, fraud, material misrepresentation, or nondisclosure;
- to our affiliate financial service providers for their use to market their products or services to you;
- to nonaffiliated third party service providers who provide or perform services on our behalf and use the disclosed information only in connection with such services;
- to nonaffiliated third party service providers with whom we perform joint marketing, pursuant to an agreement with them to market financial products or services to you;
- to law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoena or court order;

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- to lenders, lien holders, judgment creditors, or other parties claiming an interest in title whose claim or interest must be determined, settled, paid, or released prior to closing; and
- other third parties for whom you have given us written authorization to disclose your Personal Information.

We may disclose Personal Information and/or Browsing Information when required by law or in the good-faith belief that such disclosure is necessary to:

- comply with a legal process or applicable laws;
- enforce this Privacy Notice;
- investigate or respond to claims that any material, document, image, graphic, logo, design, audio, video or any other information provided by you violates the rights of a third party; or
- protect the rights, property or personal safety of FNF, its users or the public.

We maintain reasonable safeguards to keep your Personal Information secure. When we provide Personal Information to our affiliates or third party service providers as discussed in this Privacy Notice, we expect that these parties process such information in compliance with our Privacy Notice or in a manner that is in compliance with applicable privacy laws. The use of your information by a business partner may be subject to that party's own Privacy Notice. Unless permitted by law, we do not disclose information we collect from consumer or credit reporting agencies with our affiliates or others without your consent.

We reserve the right to transfer your Personal Information, Browsing Information, and any other information, in connection with the sale or other disposition of all or part of the FNF business and/or assets, or in the event of our bankruptcy, reorganization, insolvency, receivership or an assignment for the benefit of creditors. You expressly agree and consent to the use and/or transfer of the foregoing information in connection with any of the above described proceedings. We cannot and will not be responsible for any breach of security by a third party or for any actions of any third party that receives any of the information that is disclosed to us.

Choices With Your Information

Whether you submit Personal Information or Browsing Information to FNF is entirely up to you. If you decide not to submit Personal Information or Browsing Information, FNF may not be able to provide certain services or products to you. The uses of your Personal Information and/or Browsing Information that, by law, you cannot limit, include:

- for our everyday business purposes – to process your transactions, maintain your account(s), to respond to law
- enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court
- orders, or report to credit bureaus;
- for our own marketing purposes;
- for joint marketing with financial companies; and
- for our affiliates' everyday business purposes – information about your transactions and experiences.

You may choose to prevent FNF from disclosing or using your Personal Information and/or Browsing Information under the following circumstances ("opt-out"):

- for our affiliates' everyday business purposes – information about your creditworthiness; and
- for our affiliates to market to you.

To the extent permitted above, you may opt-out of disclosure or use of your Personal Information and Browsing Information by notifying us by one of the methods at the end of this Privacy Notice. We do not share your personal information with non-affiliates for their direct marketing purposes.

For California Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by California law. Currently, our policy is that we do not recognize "do not track" requests from Internet browsers and similar devices.

For Nevada Residents: You may be placed on our internal Do Not Call List by calling (888) 934-3354 or by contacting us via the information set forth at the end of this Privacy Notice. Nevada law requires that we also provide you with the following contact information: Bureau of Consumer Protection, Office of the Nevada Attorney General, 555 E. Washington St., Suite 3900, Las Vegas, NV 89101; Phone number: (702) 486-3132; email: BCPINFO@ag.state.nv.us.

For Oregon Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties for marketing purposes, except after you have been informed by us of such sharing and had an opportunity to indicate that you do not want a disclosure made for marketing purposes.

For Vermont Residents: We will not share your Personal Information and Browsing Information with nonaffiliated third parties, except as permitted by Vermont law, such as to process your transactions or to maintain your account. In addition, we will not share information about your creditworthiness with our affiliates except with your authorization. For joint marketing in Vermont, we will only disclose your name, contact information and information about your transactions.

Information From Children

The Website is meant for adults and is not intended or designed to attract children under the age of thirteen (13).We do not collect Personal Information from any person that we know to be under the age of thirteen (13) without permission from a parent or guardian. By using the Website, you affirm that you are over the age of 13 and will abide by the terms of this Privacy Notice.

Privacy Outside the Website

The Website may contain links to other websites. FNF is not and cannot be responsible for the privacy practices or the content of any of those other websites.

International Users

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FNF's headquarters is located within the United States. If you reside outside the United States or are a citizen of the European Union, please note that we may transfer your Personal Information and/or Browsing Information outside of your country of residence or the European Union for any of the purposes described in this Privacy Notice. By providing FNF with your Personal Information and/or Browsing Information, you consent to our collection and transfer of such information in accordance with this Privacy Notice.

The California Online Privacy Protection Act

For some FNF websites, such as the Customer CareNet ("CCN"), FNF is acting as a third party service provider to a mortgage loan servicer. In those instances, we may collect certain information on behalf of that mortgage loan servicer via the website. The information which we may collect on behalf of the mortgage loan servicer is as follows:

- first and last name;
- property address;
- user name and password;
- loan number;
- social security number - masked upon entry;
- email address;
- three security questions and answers; and
- IP address.

The information you submit through the website is then transferred to your mortgage loan servicer by way of CCN. **The mortgage loan servicer is responsible for taking action or making changes to any consumer information submitted through this website. For example, if you believe that your payment or user information is incorrect, you must contact your mortgage loan servicer.**

CCN does not share consumer information with third parties, other than (1) those with which the mortgage loan servicer has contracted to interface with the CCN application, or (2) law enforcement or other governmental authority in connection with an investigation, or civil or criminal subpoenas or court orders. All sections of this Privacy Notice apply to your interaction with CCN, except for the sections titled "Choices with Your Information" and "Access and Correction." If you have questions regarding the choices you have with regard to your personal information or how to access or correct your personal information, you should contact your mortgage loan servicer.

Your Consent To This Privacy Notice

By submitting Personal Information and/or Browsing Information to FNF, you consent to the collection and use of the information by us in compliance with this Privacy Notice. Amendments to the Privacy Notice will be posted on the Website. Each time you provide information to us, or we receive information about you, following any amendment of this Privacy Notice will signify your assent to and acceptance of its revised terms for all previously collected information and information collected from you in the future. We may use comments, information or feedback that you submit to us in any manner that we may choose without notice or compensation to you.

Accessing and Correcting Information; Contact Us

If you have questions, would like to access or correct your Personal Information, or want to opt-out of information sharing with our affiliates for their marketing purposes, please send your requests to privacy@fnf.com or by mail or phone to:

Fidelity National Financial, Inc.
601 Riverside Avenue
Jacksonville, Florida 32204
Attn: Chief Privacy Officer
(888) 934-3354

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Notice of Available Discounts

Pursuant to Section 2355.3 in Title 10 of the California Code of Regulations Fidelity National Financial, Inc. and its subsidiaries ("FNF") must deliver a notice of each discount available under our current rate filing along with the delivery of escrow instructions, a preliminary report or commitment. Please be aware that the provision of this notice does not constitute a waiver of the consumer's right to be charged the field rate. As such, your transaction may not qualify for the below discounts.

You are encouraged to discuss the applicability of one or more of the below discounts with a Company representative. These discounts are generally described below; consult the rate manual for a full description of the terms, conditions and requirements for each discount. These discounts only apply to transaction involving services rendered by the FNF Family of Companies. This notice only applies to transactions involving property improved with a one-to-four family residential dwelling.

FNF Underwritten Title Company
FNTC - Chicago Title Company
FNTCCA –Fidelity National Title Company of California

FNF Underwriter
CTIC - Chicago Title Insurance Company

Available Discounts

CREDIT FOR PRELIMINARY REPORTS AND/OR COMMITMENTS ON SUBSEQUENT POLICIES (CTIC)
Where no major change in the title has occurred since the issuance of the original report or commitment, the order may be reopened within 12 or 36 months and all or a portion of the charge previously paid for the report or commitment may be credited on a subsequent policy charge.

DISASTER LOANS (CTIC)
The charge for a lender's Policy (Standard or Extended coverage) covering the financing or refinancing by an owner of record, within 24 months of the date of a declaration of a disaster area by the government of the United States or the State of California on any land located in said area, which was partially or totally destroyed in the disaster, will be 50% of the appropriate title insurance rate.

CHURCHES OR CHARITABLE NON-PROFIT ORGANIZATIONS (CTIC)
On properties used as a church or for charitable purposes within the scope of the normal activities of such entities, provided said charge is normally the church's obligation the charge for an owner's policy shall be 50% to 70% of the appropriate title insurance rate, depending on the type of coverage selected. The charge for a lender's policy shall be 40% to 50% of the appropriate title insurance rate, depending on the type of coverage selected.

Error! Not a valid filename.

ATTACHMENT ONE

CALIFORNIA LAND TITLE ASSOCIATION
STANDARD COVERAGE POLICY – 1990

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance or governmental regulation (including but not limited to building or zoning laws, ordinances, or regulations) restricting, regulating, prohibiting or relating (i) the occupancy, use, or enjoyment of the land; (ii) the character, dimensions or location of any improvement now or hereafter erected on the land; (iii) a separation in ownership or a change in the dimensions or area of the land or any parcel of which the land is or was a part; or (iv) environmental protection, or the effect of any violation of these laws, ordinances or governmental regulations, except to the extent that a notice of the enforcement thereof or a notice of a defect, lien, or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
   (b) Any governmental police power not excluded by (a) above, except to the extent that a notice of the exercise thereof or notice of a defect, lien or encumbrance resulting from a violation or alleged violation affecting the land has been recorded in the public records at Date of Policy.
2. Rights of eminent domain unless notice of the exercise thereof has been recorded in the public records at Date of Policy, but not excluding from coverage any taking which has occurred prior to Date of Policy which would be binding on the rights of a purchaser for value without knowledge.
3. Defects, liens, encumbrances, adverse claims or other matters:
   (a) whether or not recorded in the public records at Date of Policy, but created, suffered, assumed or agreed to by the insured claimant;
   (b) not known to the Company, not recorded in the public records at Date of Policy, but known to the insured claimant and not disclosed in writing to the Company by the insured claimant prior to the date the insured claimant became an insured under this policy;
   (c) resulting in no loss or damage to the insured claimant;
   (d) attaching or created subsequent to Date of Policy; or
   (e) resulting in loss or damage which would not have been sustained if the insured claimant had paid value for the insured mortgage or for the estate or interest insured by this policy.
4. Unenforceability of the lien of the insured mortgage because of the inability or failure of the insured at Date of Policy, or the inability or failure of any subsequent owner of the indebtedness, to comply with the applicable doing business laws of the state in which the land is situated.
5. Invalidity or unenforceability of the lien of the insured mortgage, or claim thereof, which arises out of the transaction evidenced by the insured mortgage and is based upon usury or any consumer credit protection or truth in lending law.
6. Any claim, which arises out of the transaction vesting in the insured the estate of interest insured by this policy or the transaction creating the interest of the insured lender, by reason of the operation of federal bankruptcy, state insolvency or similar creditors' rights laws.

EXCEPTIONS FROM COVERAGE - SCHEDULE B, PART I

This policy does not insure against loss or damage (and the Company will not pay costs, attorneys' fees or expenses) which arise by reason of:

1. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the public records.
   Proceedings by a public agency which may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the public records.
2. Any facts, rights, interests, or claims which are not shown by the public records but which could be ascertained by an inspection of the land or which may be asserted by persons in possession thereof.
3. Easements, liens or encumbrances, or claims thereof, not shown by the public records.
4. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the public records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b) or (c) are shown by the public records.
6. Any lien or right to a lien for services, labor or material not shown by the public records.

CLTA HOMEOWNER'S POLICY OF TITLE INSURANCE (12-02-13)
ALTA HOMEOWNER'S POLICY OF TITLE INSURANCE

EXCLUSIONS

In addition to the Exceptions in Schedule B, You are not insured against loss, costs, attorneys' fees, and expenses resulting from:

1. Governmental police power, and the existence or violation of those portions of any law or government regulation concerning:
   a. building;
   b. zoning;
   c. land use;
   d. improvements on the Land;
   e. land division; and

f. environmental protection.

This Exclusion does not limit the coverage described in Covered Risk 8.a., 14, 15, 16, 18, 19, 20, 23 or 27.

2. The failure of Your existing structures, or any part of them, to be constructed in accordance with applicable building codes. This Exclusion does not limit the coverage described in Covered Risk 14 or 15.
3. The right to take the Land by condemning it. This Exclusion does not limit the coverage described in Covered Risk 17.
4. Risks:
   a. that are created, allowed, or agreed to by You, whether or not they are recorded in the Public Records;
   b. that are Known to You at the Policy Date, but not to Us, unless they are recorded in the Public Records at the Policy Date;
   c. that result in no loss to You; or
   d. that first occur after the Policy Date - this does not limit the coverage described in Covered Risk 7, 8.e., 25, 26, 27 or 28.
5. Failure to pay value for Your Title.
6. Lack of a right:
   a. to any land outside the area specifically described and referred to in paragraph 3 of Schedule A; and
   b. in streets, alleys, or waterways that touch the Land.

   This Exclusion does not limit the coverage described in Covered Risk 11 or 21.
7. The transfer of the Title to You is invalid as a preferential transfer or as a fraudulent transfer or conveyance under federal bankruptcy, state insolvency, or similar creditors' rights laws.
8. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
9. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.

LIMITATIONS ON COVERED RISKS

Your insurance for the following Covered Risks is limited on the Owner's Coverage Statement as follows:

- For Covered Risk 16, 18, 19, and 21 Your Deductible Amount and Our Maximum Dollar Limit of Liability shown in Schedule A.

The deductible amounts and maximum dollar limits shown on Schedule A are as follows:

	Your Deductible Amount	Our Maximum Dollar Limit of Liability
Covered Risk 16:	1.00% % of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 10,000.00
Covered Risk 18:	1.00% % of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 19:	1.00% of Policy Amount Shown in Schedule A or $5,000.00 (whichever is less)	$ 25,000.00
Covered Risk 21:	1.00% of Policy Amount Shown in Schedule A or $2,500.00 (whichever is less)	$ 5,000.00

2006 ALTA LOAN POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
      (i) the occupancy, use, or enjoyment of the Land;
      (ii) the character, dimensions, or location of any improvement erected on the Land;
      (iii) the subdivision of land; or
      (iv) environmental protection;

      or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.

   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 13 or 14); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury or any consumer credit protection or truth-in-lending law.

6. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 13(b) of this policy.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the Insured Mortgage in the Public Records. This Exclusion does not modify or limit the coverage provided under Covered Risk 11(b).

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

(Except as provided in Schedule B - Part II,(t(or T)his policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:

(PART I

(The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown by the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.

PART II

In addition to the matters set forth in Part I of this Schedule, the Title is subject to the following matters, and the Company insures against loss or damage sustained in the event that they are not subordinate to the lien of the Insured Mortgage:)

2006 ALTA OWNER'S POLICY (06-17-06)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
      (i) the occupancy, use, or enjoyment of the Land;
      (ii) the character, dimensions, or location of any improvement erected on the Land;
      (iii) the subdivision of land; or
      (iv) environmental protection;
      or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

EXCEPTIONS FROM COVERAGE

This policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees or expenses, that arise by reason of:
(The above policy form may be issued to afford either Standard Coverage or Extended Coverage. In addition to the above Exclusions from Coverage, the Exceptions from Coverage in a Standard Coverage policy will also include the following Exceptions from Coverage:

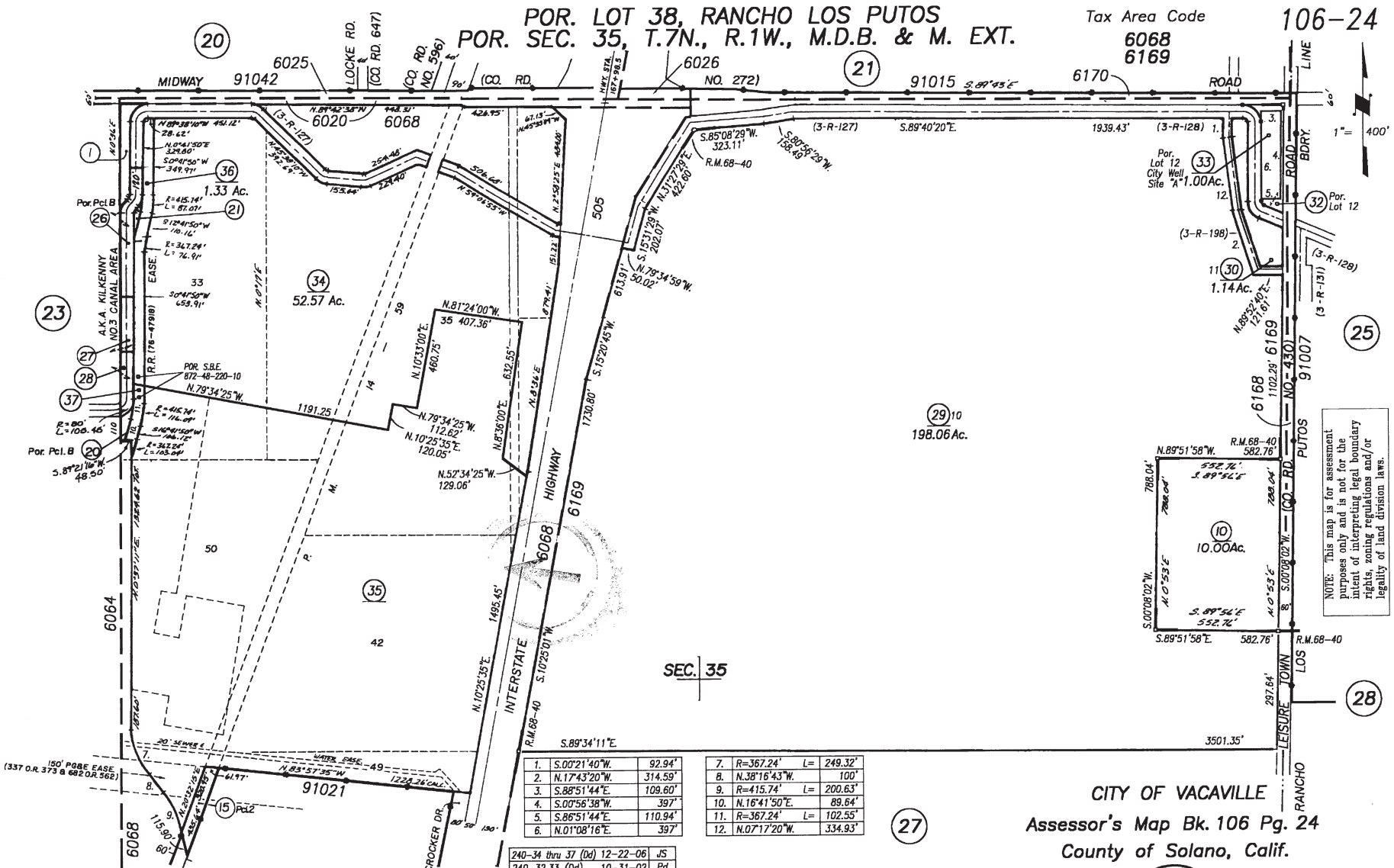
1. (a) Taxes or assessments that are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records; (b) proceedings by a public agency that may result in taxes or assessments, or notices of such proceedings, whether or not shown by the records of such agency or by the Public Records.
2. Any facts, rights, interests, or claims that are not shown in the Public Records but that could be ascertained by an inspection of the Land or that may be asserted by persons in possession of the Land.
3. Easements, liens or encumbrances, or claims thereof, not shown by the Public Records.
4. Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land and that are not shown by the Public Records.
5. (a) Unpatented mining claims; (b) reservations or exceptions in patents or in Acts authorizing the issuance thereof; (c) water rights, claims or title to water, whether or not the matters excepted under (a), (b), or (c) are shown by the Public Records.
6. Any lien or right to a lien for services, labor or material not shown by the Public Records.
7. (Variable exceptions such as taxes, easements, CC&R's, etc. shown here.)

ALTA EXPANDED COVERAGE RESIDENTIAL LOAN POLICY (12-02-13)

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy and the Company will not pay loss or damage, costs, attorneys' fees or expenses which arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 5, 6, 13(c), 13(d), 14 or 16.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risk 11, 16, 17, 18, 19, 20, 21, 22, 23, 24, 27 or 28); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Insured Mortgage.
4. Unenforceability of the lien of the Insured Mortgage because of the inability or failure of an Insured to comply with applicable doing-business laws of the state where the Land is situated.
5. Invalidity or unenforceability in whole or in part of the lien of the Insured Mortgage that arises out of the transaction evidenced by the Insured Mortgage and is based upon usury, or any consumer credit protection or truth-in-lending law. This Exclusion does not modify or limit the coverage provided in Covered Risk 26.
6. Any claim of invalidity, unenforceability or lack of priority of the lien of the Insured Mortgage as to Advances or modifications made after the Insured has Knowledge that the vestee shown in Schedule A is no longer the owner of the estate or interest covered by this policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11.
7. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching subsequent to Date of Policy. This Exclusion does not modify or limit the coverage provided in Covered Risk 11(b) or 25.
8. The failure of the residential structure, or any portion of it, to have been constructed before, on or after Date of Policy in accordance with applicable building codes. This Exclusion does not modify or limit the coverage provided in Covered Risk 5 or 6.
9. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction creating the lien of the Insured Mortgage, is
   (a) a fraudulent conveyance or fraudulent transfer, or
   (b) a preferential transfer for any reason not stated in Covered Risk 27(b) of this policy.
10. Contamination, explosion, fire, flooding, vibration, fracturing, earthquake, or subsidence.
11. Negligence by a person or an Entity exercising a right to extract or develop minerals, water, or any other substances.



1.	S.00°21'40"W.	92.94'
2.	N.17°43'20"W.	314.59'
3.	S.88°51'44"E.	109.60'
4.	S.00°56'38"W.	397'
5.	S.86°51'44"E.	110.94'
6.	N.01°08'16"E.	397'

7.	R=367.24'	L=	249.32'
8.	N.38°16'43"W.		100'
9.	R=415.74'	L=	200.63'
10.	N.16°41'50"E.		89.64'
11.	R=367.24'	L=	102.55'
12.	N.07°17'20"W.		334.93'

240-34 thru 37 (Dd)	12-22-06	JS
240-32,33 (Dd)	10-31-02	Pd
240-29-31 R.M.	5-8-98	S.W.
SBE 96-004	11-30-95	Pd
REVISION	DATE	BY

NOTE: Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

Timothy Paige Tract, R.M. Bk. 1 Pg. 106
Mission Land & Development Co., R.M. Bk. 68 Pg. 40

CITY OF VACAVILLE
Assessor's Map Bk. 106 Pg. 24
County of Solano, Calif.

07-08

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CALIFORNIA ENVIRONMENTAL REPORTING SYSTEM (CERS)

CONSOLIDATED EMERGENCY RESPONSE / CONTINGENCY PLAN

Prior to completing this Plan, please refer to the INSTRUCTIONS FOR COMPLETING A CONSOLIDATED CONTINGENCY PLAN

A. FACILITY IDENTIFICATION AND OPERATIONS OVERVIEW

FACILITY ID # — — 1.

CERS ID 10153195 A1.

DATE OF PLAN PREPARATION/REVISION 2/23/2015 A2.

BUSINESS NAME *(Same as Facility Name or DBA - Doing Business As)* Save Mart Supermarkets 3.

BUSINESS SITE ADDRESS 700 Crocker Drive 103.

BUSINESS SITE CITY Vacaville 104. CA ZIP CODE 95688 105.

TYPE OF BUSINESS (e.g., Painting Contractor) Distribution Center A3.

INCIDENTAL OPERATIONS (e.g., Fleet Maintenance) A4.

THIS PLAN COVERS CHEMICAL SPILLS, FIRES, AND EARTHQUAKES INVOLVING: (Check all that apply) A5.

☒ 1. HAZARDOUS MATERIALS; ☐ 2. HAZARDOUS WASTES

B. INTERNAL RESPONSE

INTERNAL FACILITY EMERGENCY RESPONSE WILL OCCUR VIA: (Check all that apply) B1.

☒ 1. CALLING PUBLIC EMERGENCY RESPONDERS (i.e., 9-1-1)
☒ 2. CALLING HAZARDOUS WASTE CONTRACTOR
☒ 3. ACTIVATING IN-HOUSE EMERGENCY RESPONSE TEAM

C. EMERGENCY COMMUNICATIONS, PHONE NUMBERS AND NOTIFICATIONS

Whenever there is an imminent or actual emergency situation such as an explosion, fire, or release, the Emergency Coordinator (or his/her designee when the Emergency Coordinator is on call) shall:

1. Activate internal facility alarms or communications systems, where applicable, to notify all facility personnel.
2. Notify appropriate local authorities (i.e., call 9-1-1).
3. Notify the California Emergency Management Agency at (800) 852-7550.

Before facility operations are resumed in areas of the facility affected by the incident, the emergency coordinator shall notify the California Department of Toxic Substances Control (DTSC), the local Unified Program Agency (UPA), and the local fire department's hazardous materials program that the facility is in compliance with requirements to:

1. Provide for proper storage and disposal of recovered waste, contaminated soil or surface water, or any other material that results from an explosion, fire, or release at the facility; and
2. Ensure that no material that is incompatible with the released material is transferred, stored, or disposed of in areas of the facility affected by the incident until cleanup procedures are completed.

INTERNAL FACILITY EMERGENCY COMMUNICATIONS OR ALARM NOTIFICATION WILL OCCUR VIA: (Check all that apply) C1.

☒ 1. VERBAL WARNINGS; ☒ 2. PUBLIC ADDRESS OR INTERCOM SYSTEM; ☐ 3. TELEPHONE;
☐ 4. PAGERS; ☒ 5. ALARM SYSTEM; ☐ 6. PORTABLE RADIO

NOTIFICATIONS TO NEIGHBORING FACILITIES THAT MAY BE AFFECTED BY AN OFF-SITE RELEASE WILL OCCUR BY: (Check all that apply) C2.

☒ 1. VERBAL WARNINGS; ☐ 2. PUBLIC ADDRESS OR INTERCOM SYSTEM; ☒ 3. TELEPHONE;
☐ 4. PAGERS; ☐ 5. ALARM SYSTEM; ☐ 6. PORTABLE RADIO

EMERGENCY RESPONSE PHONE NUMBERS:

AMBULANCE, FIRE, POLICE AND CHP		9-1-1
CALIFORNIA EMERGENCY MANAGEMENT AGENCY (CAL/EMA)		(800) 852-7550
NATIONAL RESPONSE CENTER (NRC)		(800) 424-8802
POISON CONTROL CENTER		(800) 222-1222
LOCAL UNIFIED PROGRAM AGENCY (UPA/CUPA)		(707) 784-6765 C3.
OTHER (Specify):	C4.	C5.

NEAREST MEDICAL FACILITY / HOSPITAL NAME: North Bay Vacaville Hospital C6. (707) 446-4000 C7.

AGENCY NOTIFICATION PHONE NUMBERS:

CALIFORNIA DEPT. OF TOXIC SUBSTANCES CONTROL (DTSC)		(916) 255-3545
REGIONAL WATER QUALITY CONTROL BOARD		(916) 464-3291 C8.
U.S. ENVIRONMENTAL PROTECTION AGENCY (US EPA)		(800) 300-2193
CALIFORNIA DEPT OF FISH AND GAME (DFG)		(916) 358-2900
U.S. COAST GUARD		(202) 267-2180
CAL/OSHA		(916) 263-2800
STATE FIRE MARSHAL		(916) 445-8200
OTHER (Specify):	Yolo-Solano AQMD C9.	(530) 757-3650 C10.
OTHER (Specify):	C11.	C12.

D. EMERGENCY CONTAINMENT AND CLEANUP PROCEDURES

SPILL PREVENTION, CONTAINMENT, AND CLEANUP PROCEDURES: (Check all boxes that apply to indicate your procedures for containing spills, releases, fires or explosions; and. preventing and mitigating associated harm to persons, property, and the environment.)

D1.

- ☐ 1. MONITOR FOR LEAKS, RUPTURES, PRESSURE BUILD-UP, ETC.;
- ☒ 2. PROVIDE STRUCTURAL PHYSICAL BARRIERS (e.g., Portable spill containment walls);
- ☒ 3. PROVIDE ABSORBENT PHYSICAL BARRIERS (e.g., Pads, pigs, pillows);
- ☒ 4. COVER OR BLOCK FLOOR AND/ OR STORM DRAINS;
- ☒ 5. BUILT-IN BERM IN WORK / STORAGE AREA;
- ☒ 6. AUTOMATIC FIRE SUPPRESSION SYSTEM;
- ☒ 7. ELIMINATE SOURCES OF IGNITION FOR FLAMMABLE HAZARDS (e.g. Flammable liquids, Propane);
- ☒ 8. STOP PROCESSES AND/OR OPERATIONS;
- ☒ 9. AUTOMATIC / ELECTRONIC EQUIPMENT SHUT-OFF SYSTEM;
- ☒ 10. SHUT-OFF WATER, GAS, ELECTRICAL UTILITIES AS APPROPRIATE;
- ☒ 11. CALL 9-1-1 FOR PUBLIC EMERGENCY RESPONDER ASSISTANCE / MEDICAL AID;
- ☒ 12. NOTIFY AND EVACUATE PERSONS IN ALL THREATENED AREAS;
- ☒ 13. ACCOUNT FOR EVACUATED PERSONS IMMEDIATELY AFTER EVACUATION CALL;
- ☒ 14. PROVIDE PROTECTIVE EQUIPMENT FOR ON-SITE RESPONSE TEAM;
- ☒ 15. REMOVE OR ISOLATE CONTAINERS / AREA AS APPROPRIATE;
- ☒ 16. HIRE LICENSED HAZARDOUS WASTE CONTRACTOR;
- ☒ 17. USE ABSORBENT MATERIAL FOR SPILLS WITH SUBSEQUENT PROPER LABELING, STORAGE, AND HAZARDOUS WASTE DISPOSAL AS APPROPRIATE;
- ☐ 18. SUCTION USING SHOP VACUUM WITH SUBSEQUENT PROPER LABELING, STORAGE, AND HAZARDOUS WASTE DISPOSAL AS APPROPRIATE;
- ☒ 19. WASH / DECONTAMINATE EQUIPMENT W/ CONTAINMENT and DISPOSAL OF EFFLUENT / RINSATE AS HAZARDOUS WASTE;
- ☒ 20. PROVIDE SAFE TEMPORARY STORAGE OF EMERGENCY-GENERATED WASTES;
- ☐ 21. OTHER (Specify):

D2.

E. FACILITY EVACUATION

THE FOLLOWING ALARM SIGNAL(S) WILL BE USED TO BEGIN EVACUATION OF THE FACILITY (CHECK ALL THAT APPLY): E1.

- ☒ 1. BELLS;
- ☒ 2. HORNS/SIRENS;
- ☒ 3. VERBAL (I.E., SHOUTING);
- ☒ 4. OTHER (Specify): PA System

E2.

THE FOLLOWING LOCATION(S) IS/ARE EVACUEE EMERGENCY ASSEMBLY AREA(S) (i.e., Front parking lot, specific street corner, etc.) E3.

In front of transportation department.

Note: The Emergency Coordinator must account for all on site employees and/or site visitors after evacuation.

☒ EVACUATION ROUTE MAP(S) POSTED AS REQUIRED E4.

Note: The map(s) must show primary and alternate evacuation routes, emergency exits, and primary and alternate staging areas, and must be prominently posted throughout the facility in locations where it will be visible to employees and visitors.

F. ARRANGEMENTS FOR EMERGENCY SERVICES

Explanation of Requirement: Advance arrangements with local fire and police departments, hospitals, and/or emergency services contractors should be made as appropriate for your facility. You may determine that such arrangements are not necessary.

ADVANCE ARRANGEMENTS FOR LOCAL EMERGENCY SERVICES (Check one of the following) F1.

- ☒ 1. HAVE BEEN DETERMINED NOT NECESSARY; *or*
- ☐ 2. THE FOLLOWING ARRANGEMENTS HAVE BEEN MADE (Specify):

F2.

The emergency response plan is available at the guard shack. The fire department was provided a copy of the plan.

G. EMERGENCY EQUIPMENT

Check all boxes that apply to list emergency response equipment available at the facility and identify the location(s) where the equipment is kept and the equipment's capability, if applicable. [e.g., ☒ CHEMICAL PROTECTIVE GLOVES | Spill response kit | One time use, Oil & solvent resistant only.]

TYPE	EQUIPMENT AVAILABLE	LOCATION	CAPABILITY *(If applicable)*
Safety and First Aid	1. ☒ CHEMICAL PROTECTIVE SUITS, APRONS, OR VESTS	G2. Truck/maintenance shop	G3.
	2. ☒ CHEMICAL PROTECTIVE GLOVES	G4. Warehouse, Maintenance Dept., Truck Shop	G5.
	3. ☒ CHEMICAL PROTECTIVE BOOTS	G6. Maintenance Dept.	G7.
	4. ☒ SAFETY GLASSES / GOGGLES / SHIELDS	G8. Maintenance Dept., Truck Shop	G9.
	5. ☒ HARD HATS	G10. Maintenance Dept.	G11.
	6. ☐ CARTRIDGE RESPIRATORS	G12.	G13.
	7. ☐ SELF-CONTAINED BREATHING APPARATUS (SCBA)	G14.	G15.
	8. ☒ FIRST AID KITS / STATIONS	G16. All departments	G17.
	9. ☒ PLUMBED EYEWASH FOUNTAIN / SHOWER	G18. Throughout facility	G19.
	10. ☒ PORTABLE EYEWASH KITS	G20. Throughout faciility	G21.
	11. ☐ OTHER	G22.	G23.
	12. ☐ OTHER	G24.	G25.
Fire Fighting	13. ☒ PORTABLE FIRE EXTINGUISHERS	G26. Throughout facility	G27.
	14. ☒ FIXED FIRE SYSTEMS / SPRINKLERS / FIRE HOSES	G28. Throughout facility	G29.
	15. ☒ FIRE ALARM BOXES OR STATIONS	G30. Throughout facility	G31.
	16. ☐ OTHER	G32.	G33.
Spill Control and Clean-Up	17. ☒ ALL-IN-ONE SPILL KIT	G34. Maintenance Shop	G35.
	18. ☒ ABSORBENT MATERIAL	G36. Reclamation Room, Maintenance, Truck Shop	G37.
	19. ☒ CONTAINER FOR USED ABSORBENT	G38. Maintenance Dept. / Truck Shop	G39.
	20. ☒ BERMING / DIKING EQUIPMENT	G40. Maintenance Dept. / Truck Shop	G41.
	21. ☒ BROOM	G42. Throughout facility	G43.
	22. ☒ SHOVEL	G44. Maintenance / Salvage / Truck Shop	G45.
	23. ☒ SHOP VAC	G46. Maintenance / Truck Shop	G47.
	24. ☒ EXHAUST HOOD	G48. Tire & Lube Shop / Maintenance Dept.	G49.
	25. ☒ EMERGENCY SUMP / HOLDING TANK	G50. Battery Room	G51.
	26. ☒ CHEMICAL NEUTRALIZERS	G52. Battery Room	G53.
	27. ☐ GAS CYLINDER LEAK REPAIR KIT	G54.	G55.
	28. ☐ SPILL OVERPACK DRUMS	G56.	G57.
	29. ☐ OTHER	G58.	G59.
Communi-cations and Alarm Systems	30. ☒ TELEPHONES (Includes cellular)	G60. Offices, pallet dock, guard gate	G61.
	31. ☒ INTERCOM / PA SYSTEM	G62. Throughout facility	G63.
	32. ☒ PORTABLE RADIOS	G64. All departments, guard gate	G65.
	33. ☐ AUTOMATIC ALARM CHEMICAL MONITORING EQUIPMENT	G66.	G67.
Other	34. ☐ OTHER	G68.	G69.
	35. ☐ OTHER	G70.	G71.

H. EARTHQUAKE VULNERABILITY

Identify areas of the facility that are vulnerable to hazardous materials releases / spills due to earthquake-related motion. These areas require immediate isolation and inspection.

VULNERABLE AREAS: (Check all that apply)		LOCATIONS (e.g., shop, outdoor shed, forensic lab)	
☒ 1. HAZARDOUS MATERIALS / WASTE STORAGE AREA	H1.	Salvage, warehouse storage, maintenance dept., truck shop	H2.
☐ 2. PROCESS LINES / PIPING			H3.
☐ 3. LABORATORY			H4.
☐ 4. WASTE TREATMENT AREA			H5.

Identify mechanical systems vulnerable to releases / spills due to earthquake-related motion. These systems require immediate isolation and inspection.

VULNERABLE SYSTEMS: (Check all that apply)		LOCATIONS	
☒ 1. SHELVES, CABINETS AND RACKS	H6.	Throughout facility	H7.
☐ 2. TANKS (EMERGENCY SHUTOFF)			H8.
☒ 3. PORTABLE GAS CYLINDERS		Maintenance, Truck shop	H9.
☒ 4. EMERGENCY SHUTOFF AND/OR UTILITY VALVES		Propane Tank, Electrical Main	H10.
☒ 5. SPRINKLER SYSTEMS		Throughout facility	H11.
☒ 6. STATIONARY PRESSURIZED CONTAINERS (e.g., Propane dispensing tank)		Propane Storage Area	H12.

I. EMPLOYEE TRAINING

Explanation of Requirement: Employee training is required for all employees handling hazardous materials and hazardous wastes in day-to-day or clean-up operations including volunteers and/or contractors. Training must be:

- Provided within 6 months for new hires;
- Amended as necessary prior to change in process or work assignment;
- Given upon modification to the Emergency Response / Contingency Plan, and updated/refreshed annually for all employees.

Required content includes all of the following:

- Material Safety Data Sheets;
- Hazard communication related to health and safety;
- Methods for safe handling of hazardous substances;
- Fire hazards of materials / processes;
- Conditions likely to worsen emergencies;
- Coordination of emergency response;
- Notification procedures;
- Applicable laws and regulations;
- Communication and alarm systems;
- Personal protective equipment;
- Use of emergency response equipment (e.g. Fire extinguishers, respirators, etc.);
- Decontamination procedures;
- Evacuation procedures;
- Control and containment procedures;
- UST monitoring system equipment and procedures (if applicable).

INDICATE HOW EMPLOYEE TRAINING PROGRAM IS ADMINISTERED (Check all that apply) I1.

☐ 1. FORMAL CLASSROOM; ☐ 2. VIDEOS; ☒ 3. SAFETY / TAILGATE MEETINGS;

☒ 4. STUDY GUIDES / MANUALS (Specify): IIPP Binder I2.

☐ 5. OTHER (Specify): I3.

☐ 6. NOT APPLICABLE BECAUSE FACILITY HAS NO EMPLOYEES

Large Quantity Generator (LQG) Training Records: Large quantity hazardous waste generators (i.e., who generate more than 270 gallons/1,000 kilograms of hazardous waste per month) must retain written documentation of employee hazardous waste management training sessions which includes:

- A written outline/agenda of the type and amount of both introductory and continuing training that will be given to persons filling each job position having responsibility for the management of hazardous waste (e.g., labeling, manifesting, compliance with accumulation time limits, etc.).
- The name, job title, and date of training for each hazardous waste management training session given to an employee filling such a job position; and
- A written job description for each of the above job positions that describes job duties and the skills, education, or other qualifications required of personnel assigned to the position.
- Current employee training records must be retained until closure of the facility.
- Former employee training records must be retained at least three years after termination of employment.

J. LIST OF ATTACHMENTS

(Check one of the following) J1.

☒ 1. NO ATTACHMENTS ARE REQUIRED; *or*

☐ 2. THE FOLLOWING DOCUMENTS ARE ATTACHED: J2.

K. SIGNATURE / CERTIFICATION

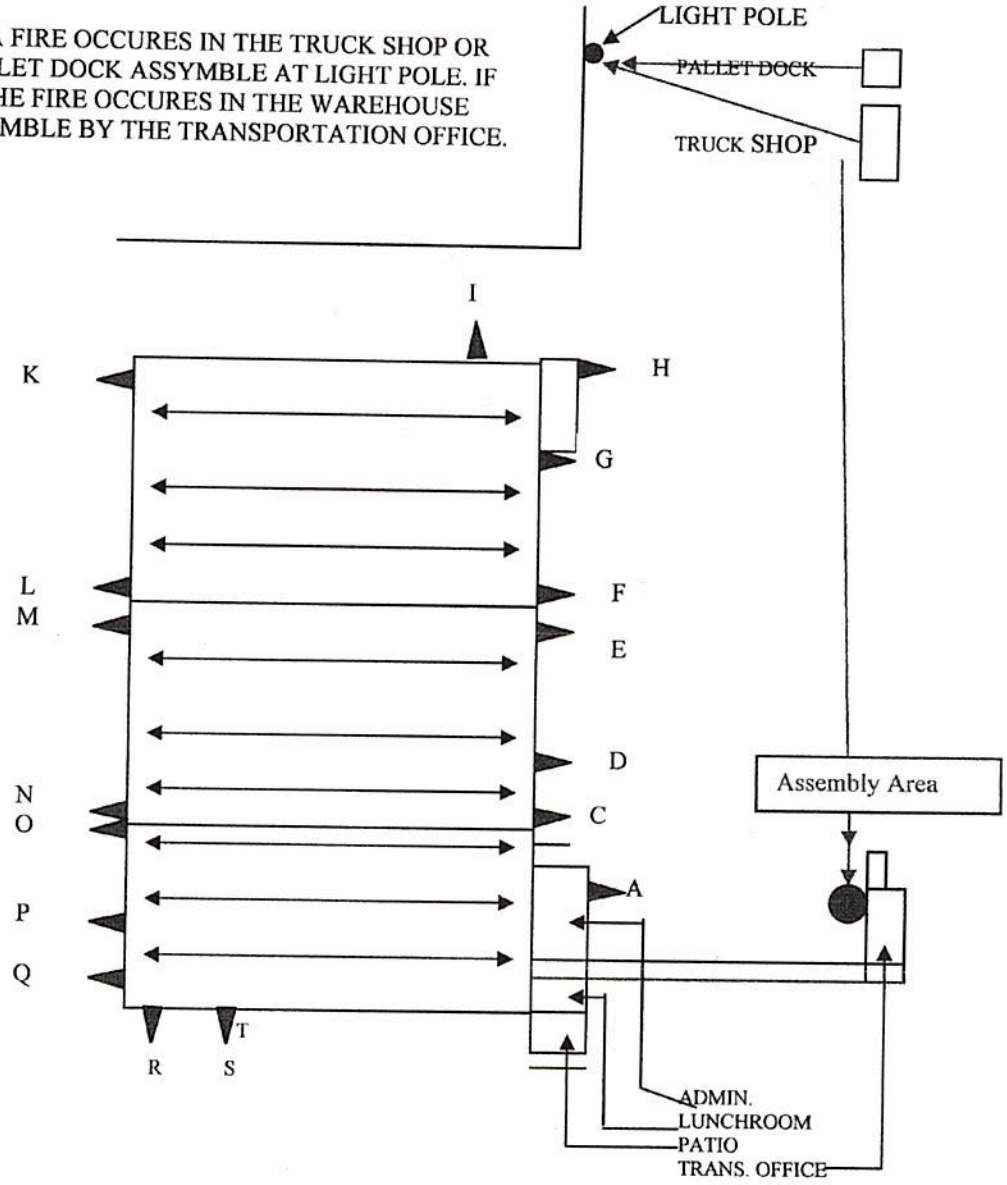
Certification: Based on my inquiry of those individuals responsible for obtaining the information, I certify under penalty of law that I have personally examined and am familiar with the information submitted and believe the information is true, accurate, and complete, and that a copy is available on site.

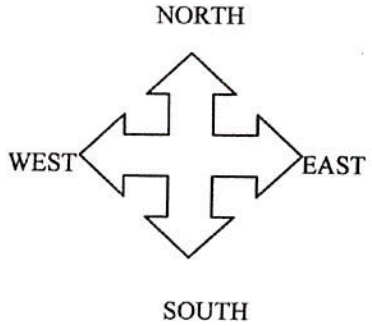
SIGNATURE OF OWNER/OPERATOR	DATE SIGNED K1.
NAME OF SIGNER (print) K2. Andrew Butterfield	TITLE OF SIGNER K3. Senior Manager, Environmental Health & Safety

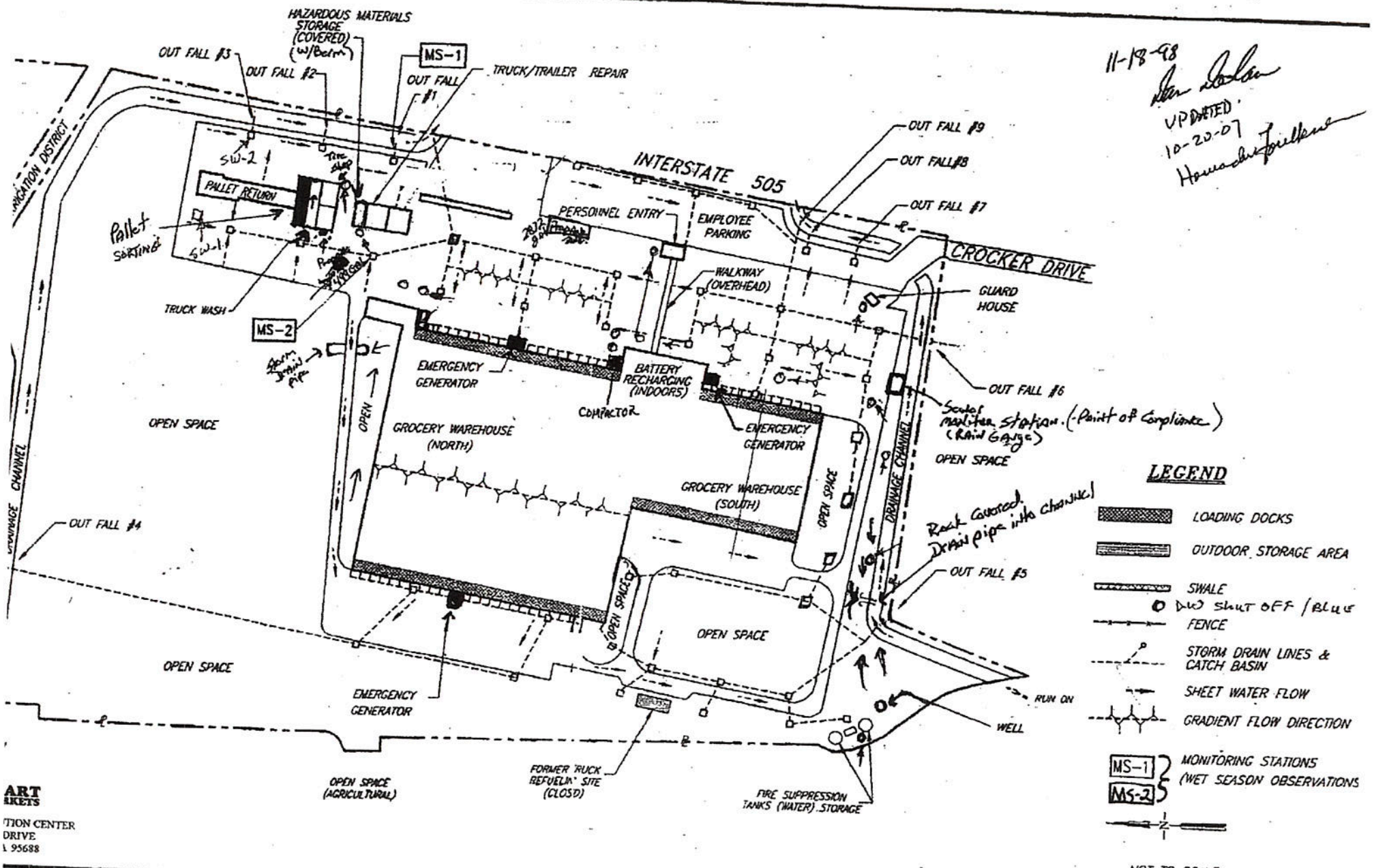
Vacaville Distribution Center #802

10/30/07

IF A FIRE OCCURES IN THE TRUCK SHOP OR PALLET DOCK ASSYMBLE AT LIGHT POLE. IF THE FIRE OCCURES IN THE WAREHOUSE ASSYMBLE BY THE TRANSPORTATION OFFICE.







ART
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DRIVE
A 95688

SITE STORM DRAIN SEC. C

Environmental Geotechnical Construction ...ering - Testing	Client:	STORES DISTRIBUTION FACILITY VACAVILLE, CALIFORNIA	Drawn by: JBL	Date: 10/15/98	Approved by: RCL	Figure 1
	Title:	STORM WATER FACILITIES AND MONITORING SYSTEMS	Drawing No. 8C020-01	Project No. 892-8C414	1

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Truck Shop, Welding Shop Main Building, Portable Welder

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 2.1 - Flammable Gases	**Acetylene**	**Cu. Feet**	**966**	**127**	500	0	- Fire				
Unstable (Reactive), Class 2, Flammable Gas	CAS No 74-86-2	State Gas	Storage Container Cylinder		Pressue Ambient	Waste Code					
		Type Pure	Days on Site: 365		Temperature Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Truck Shop, Welding Shop Main Building, Portable Carts

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Argon Gas	**Cu. Feet**	**1908**	**318**	1000	0					
	CAS No 7440-37-1	State Gas	Storage Container Cylinder		Pressue Ambient	Waste Code					
		Type Pure	Days on Site: 365		Temperature Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Truck shop, welding Shop Main Building, Portable Carts

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Oxygen	**Cu. Feet**	**2800**	**318**	1500	0	- Fire - Reactive				
	CAS No 7782-44-7	State Gas	Storage Container Cylinder		Pressue Ambient	Waste Code					
		Type Pure	Days on Site: 365		Temperature Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Truck Shop Haz Mat Area

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	D-A Antifreeze	**Pounds**	**220**	**55**	150	0	- Reactive	Ethylene Glycol	40 %		107-21-1
	CAS No	State	Storage Container		Pressue	Waste Code	- Chronic health	Diethlene Glycol	1 %		111-46-6
	107-21-1	Liquid	Steel Drum					Potassium 2-Ethylhezanoate	1 %		3164-85-0
		Type			Temperature						
		Mixture	Days on Site: 365								

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Truck shop bulk tank

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Used/Waste Motor Oil and Gear Oil	**Gallons**	**1000**	**1000**	500	1450	- Fire	Highly refined mineral oil	70 %		Mixture
	CAS No: Mixture	State: Liquid	Storage Container: Aboveground Tank		Pressue: Ambient	Waste Code: 221					
		Type: Mixture	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Truck Repair shop and Warehouse maintenance shop

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Quantities Largest Cont.	Quantities Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Transmission Fluid	**Gallons**	**330**	**110**	200	0		Hydrocarbon	100 %		NA
	CAS No Mixture	State Liquid	Storage Container Aboveground Tank, Steel Drum		Pressue Ambient	Waste Code					
		Type Mixture	Days on Site: 365		Temperature Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Outside maintenance shop warehouse

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Motor Oil and Gear Oil	**Gallons**	**310**	**55**	180	0		Highly refined petroleum oil	70 %		Mixture
	CAS No: Mixture	State: Liquid	Storage Container: Steel Drum		Pressue: Ambient	Waste Code					
		Type: Mixture	Days on Site: 365		Temperature: Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Fire Pump House (southwest corner of property)

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Diesel Fuel	**Gallons**	**1000**	**500**	700	0	- Reactive	C9-C16 Hyrdocarbons	99 %		68476-30-2
	CAS No	State	Storage Container		Pressue	Waste Code		123 - Trimethylbenzend	0 %		95-63-6
	68476-34-6	Liquid	Aboveground Tank		Ambient			Biphenyl	0 %		92-52-4
		Type			Temperature			Napthalene	0 %		91-20-3
		Mixture	Days on Site: 365		Ambient			Xylene	0 %		1330-20-7

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Bulk tank eastside of property (1L gal, truck shop (480 gal.) 23 bottles.

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Propane with Odorant	**Gallons**	**2506**	**1000**	1088	0	- Fire	Propane	99 %		74-98-6
	CAS No 74-98-6	State Liquid	Storage Container Aboveground Tank		Pressue Ambient	Waste Code		Ethyl Mercaptan	1 %		75-08-1
		Type Mixture	Days on Site: 365		Temperature Ambient						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Bulk tank at truck shop

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Motor Oil and Gear Oil	**Gallons**	**1200**	**1000**	600	3200	- Fire	Highly refined mineral oil	70 %		mixture
	CAS No Mixture	State Liquid	Storage Container Aboveground Tank		Pressue	Waste Code 221					
		Type Mixture	Days on Site: 365		Temperature						

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
Battery Room and Fork Lifts throughout facility

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
DOT: 8 - Corrosives (Liquids and Solids)	**Lead Acid Batteries** CAS No 7664-93-9 ✓EHS	**Pounds** State Liquid Type Mixture	**66159** Storage Container Other Days on Site: 365	**81.36**	66159 Pressue Ambient Temperature Ambient	0 Waste Code	- Fire - Acute Health - Chronic health	Suluric Acid	30 %	✓	7664-93-9

Hazardous Materials And Wastes Inventory Matrix Report

CERS Business/Org. **Save Mart Supermarkets**
Facility Name **SAVE MART SUPERMARKETS**
700 CROCKER DR , VACAVILLE 95688-8707

Chemical Location
4 Electrial Transformers onsite

CERS ID **10153195**
Facility ID **48-000-050027**
Status **Submitted** on 2/16/2016 8:50 AM

DOT Code/Fire Haz. Class	Common Name	Unit	Quantities Max. Daily	Largest Cont.	Avg. Daily	Annual Waste Amount	Federal Hazard Categories	Hazardous Components (For mixture only) Component Name	% Wt	EHS	CAS No.
	Shell Transformer Mineral Oil	**Gallons**	**992**	**248**	248	0	- Fire	Highly refined mineral oil	70 %		64742-53-6
	CAS No 64742-53-6	State Liquid	Storage Container Aboveground Tank		Pressue Ambient	Waste Code 221					
		Type Pure	Days on Site: 365		Temperature Ambient						

California Environmental Reporting System (CERS)

Business Owner Operator

Facility/Site

SAVE MART SUPERMARKETS
700 CROCKER DR
VACAVILLE , CA 95688-8707

CERS ID
10153195

Submittal Status

Submitted on 2/16/2016 by *Tammy Sibbitt* of Save Mart Supermarkets (Modesto, CA)

Identification

Save Mart Supermarkets

Operator Phone	Business Phone	Business Fax	Beginning Date	Ending Date	
(707) 446-5925	(707) 446-5925		2/16/2016	2/15/2017	
			Dun & Bradstreet	SIC Code	Primary NAICS
			007874480	5149	445110

Facility/Site Mailing Address

700 CROCKER DR
VACAVILLE , CA 95688-8707

Primary Emergency Contact

Steve Wilde
Title
Facility Maintenace Manager

Business Phone	24-Hour Phone	Pager Number
(707) 446-5948	(707) 718-1266	

Owner

SAVE MART SUPERMARKETS
(209) 577-1600
1800 Standiford Ave.
MODESTO , CA 95350-0180

Secondary Emergency Contact

Tim Robinson
Title
Warehouse Manager

Business Phone	24-Hour Phone	Pager Number
(707) 446-5934	(916) 595-6234	

Billing Contact

ATTN: Accounting
(209) 574-6292 lorna@savemart.com
PO BOX 4664
Modesto, CA 95352

Environmental Contact

Andrew Butterfield
2095746299X5423 andrew.butterfield@savemart.com
1800 Standiford Ave.
Modesto, CA 95350

Name of Signer	Signer Title	Document Preparer
Andrew Butterfield	Senior Manager, Environmental Health & Safety	Tammy Sibbitt

Additional Information

Locally-collected Fields

Some or all of the following fields may be required by your local regulator(s).

Property Owner

Phone

Mailing Address

Assessor Parcel Number (APN)

Number of Employees

Facility ID
48-000-050027

Site Identification

SAVE MART SUPERMARKETS
700 CROCKER DR
VACAVILLE , CA 95688-8707
County
Solano

CERS ID
10153195
EPA ID Number
CAD983617036

Submittal Status

Submitted on 2/16/2016 by *Tammy Sibbitt* of Save Mart Supermarkets (Modesto, CA)

Hazardous Materials

Does your facility have on site (for any purpose) at any one time, hazardous materials at or above 55 gallons for liquids, 500 pounds for solids, or 200 cubic feet for compressed gases (include liquids in ASTs and USTs); or is regulated under more restrictive inventory local reporting requirements (shown below if present); or the applicable Federal threshold quantity for an extremely hazardous substance specified in 40 CFR Part 355, Appendix A or B; or handle radiological materials in quantities for which an emergency plan is required pursuant to 10 CFR Parts 30, 40 or 70?	Yes

Underground Storage Tank(s) (UST)

Does your facility own or operate underground storage tanks?	No

Hazardous Waste

Is your facility a Hazardous Waste Generator?	Yes
Does your facility treat hazardous waste on-site?	Yes
Is your facility's treatment subject to financial assurance requirements (for Permit by Rule and Conditional Authorization)?	No
Does your facility consolidate hazardous waste generated at a remote site?	No
Does your facility need to report the closure/removal of a tank that was classified as hazardous waste and cleaned on-site?	No
Does your facility generate in any single calendar month 1,000 kilograms (kg) (2,200 pounds) or more of federal RCRA hazardous waste, or generate in any single calendar month, or accumulate at any time, 1 kg (2.2 pounds) of RCRA acute hazardous waste; or generate or accumulate at any time more than 100 kg (220 pounds) of spill cleanup materials contaminated with RCRA acute hazardous waste.	No
Is your facility a Household Hazardous Waste (HHW) Collection site?	No

Excluded and/or Exempted Materials

Does your facility recycle more than 100 kg/month of excluded or exempted recyclable materials (per HSC 25143.2)?	No
Does your facility own or operate ASTs above these thresholds? Store greater than 1,320 gallons of petroleum products (new or used) in aboveground tanks or containers.	Yes
Does your facility have Regulated Substances stored onsite in quantities greater than the threshold quantities established by the California Accidental Release prevention Program (CalARP)?	No

Additional Information

No additional comments provided.

SAVE MART SUPERMARKETS (CERSID: 10153195)

Facility Information **Submitted Feb 16, 2016**
Submitted on 2/16/2016 8:50:03 AM by *Tammy Sibbitt* of Save Mart Supermarkets (Modesto, CA)

- Business Activities
- Business Owner/Operator Identification

Hazardous Materials Inventory **Submitted Feb 16, 2016**
Submitted on 2/16/2016 8:50:03 AM by *Tammy Sibbitt* of Save Mart Supermarkets (Modesto, CA)

- Hazardous Material Inventory (12)
- Site Map (Official Use Only)
  - *Facility Map* (Adobe PDF, 222KB)

Emergency Response and Training Plans **Submitted Feb 16, 2016**
Submitted on 2/16/2016 8:50:03 AM by *Tammy Sibbitt* of Save Mart Supermarkets (Modesto, CA)

- Emergency Response/Contingency Plan
  - *Emergency Response/Contingency Plan* (Adobe PDF, 230KB)
- Employee Training Plan
  - Provided In Submital Element: Emergency Response and Training Plans

2015 Consumer Confidence Report

Water System Name: Save Mart Distribution Center #802 Report Date: 3/16/2016

We test the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of January 1 - December 31, 2015 and may include earlier monitoring data.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo ó hable con alguien que lo entienda bien.

Type of water source(s) in use: Well

Name & general location of source(s): Well-1 south west corner of property just south of water tanks and pump house

Drinking Water Source Assessment information: Assessment Date: Oct. 22, 2002 By: KNS San Francisco, Ca.

Time and place of regularly scheduled board meetings for public participation:

For more information, contact: Steve Wilde Phone: (707)446-5948

TERMS USED IN THIS REPORT

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standards (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Drinking Water Standards (SDWS): MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Regulatory Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Variances and Exemptions: State Board permission to exceed an MCL or not comply with a treatment technique under certain conditions.

ND: not detectable at testing limit

ppm: parts per million or milligrams per liter (mg/L)

ppb: parts per billion or micrograms per liter (µg/L)

ppt: parts per trillion or nanograms per liter (ng/L)

ppq: parts per quadrillion or picogram per liter (pg/L)

pCi/L: picocuries per liter (a measure of radiation)

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring

minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- *Microbial contaminants*, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- *Inorganic contaminants*, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides*, that may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- *Organic chemical contaminants*, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- *Radioactive contaminants*, that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the USEPA and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Tables 1, 2, 3, 4, 5, 7, and 8 list all of the drinking water contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State Board allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative of the water quality, are more than one year old.

TABLE 1 – SAMPLING RESULTS SHOWING THE DETECTION OF COLIFORM BACTERIA

Microbiological Contaminants (complete if bacteria detected)	Highest No. of Detections	No. of months in violation	MCL	MCLG	Typical Source of Bacteria
Total Coliform Bacteria	(In a mo.)	0	More than 1 sample in a month with a detection	0	Naturally present in the environment
Fecal Coliform or *E. coli*	(In the year)	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or *E. coli*	0	Human and animal fecal waste

TABLE 2 – SAMPLING RESULTS SHOWING THE DETECTION OF LEAD AND COPPER

Lead and Copper (complete if lead or copper detected in the last sample set)	Sample Date	No. of samples collected	90th percentile level detected	No. sites exceeding AL	AL	PHG	Typical Source of Contaminant
Lead (ppb)	2/11/14	7	ND	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	2/11/14	7	ND	0	1.3	0.3	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

TABLE 3 – SAMPLING RESULTS FOR SODIUM AND HARDNESS

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
Sodium (ppm)	11/20/02	ND		none	none	Salt present in the water and is generally naturally occurring
Hardness (ppm)	2/04/08	160 ml/g		none	none	Sum of polyvalent cations present in the water, generally magnesium

						and calcium, and are usually naturally occurring

**Any violation of an MCL or AL is asterisked. Additional information regarding the violation is provided later in this report.*

TABLE 4 – DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
N/A						
N/A						

TABLE 5 – DETECTION OF CONTAMINANTS WITH A SECONDARY DRINKING WATER STANDARD

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	MCL	PHG (MCLG)	Typical Source of Contaminant
N/A						
N/A						

TABLE 6 – DETECTION OF UNREGULATED CONTAMINANTS

Chemical or Constituent (and reporting units)	Sample Date	Level Detected	Range of Detections	Notification Level	Health Effects Language
N/A					

**Any violation of an MCL, MRDL, or TT is asterisked. Additional information regarding the violation is provided later in this report.*

Additional General Information on Drinking Water

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

Lead-Specific Language for Community Water Systems: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. [INSERT NAME OF UTILITY] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. [Optional: If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.] If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/lead.

Summary Information for Violation of a MCL, MRDL, AL, TT, or Monitoring and Reporting Requirement

VIOLATION OF A MCL, MRDL, AL, TT, OR MONITORING AND REPORTING REQUIREMENT				
Violation	Explanation	Duration	Actions Taken to Correct the Violation	Health Effects Language
Nitrate	Test completed but invalid	3 Months	Retest scheduled	none

For Water Systems Providing Ground Water as a Source of Drinking Water

TABLE 7 – SAMPLING RESULTS SHOWING FECAL INDICATOR-POSITIVE GROUND WATER SOURCE SAMPLES					
Microbiological Contaminants (complete if fecal-indicator detected)	Total No. of Detections	Sample Dates	MCL [MRDL]	PHG (MCLG) [MRDLG]	Typical Source of Contaminant
E. coli	(In the year)	n/a	0	(0)	Human and animal fecal waste
Enterococci	(In the year)	n/a	TT	n/a	Human and animal fecal waste
Coliphage	(In the year)	n/a	TT	n/a	Human and animal fecal waste

Summary Information for Fecal Indicator-Positive Ground Water Source Samples, Uncorrected Significant Deficiencies, or Ground Water TT

SPECIAL NOTICE OF FECAL INDICATOR-POSITIVE GROUND WATER SOURCE SAMPLE

SPECIAL NOTICE FOR UNCORRECTED SIGNIFICANT DEFICIENCIES

VIOLATION OF GROUND WATER TT				
TT Violation	Explanation	Duration	Actions Taken to Correct the Violation	Health Effects Language
None				

For Systems Providing Surface Water as a Source of Drinking Water

TABLE 8 - SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES	
Treatment Technique [(a)] (Type of approved filtration technology used)	N/A
Turbidity Performance Standards [(b)] (that must be met through the water treatment process)	Turbidity of the filtered water must: 1 – Be less than or equal to _____ NTU in 95% of measurements in a month. 2 – Not exceed _____ NTU for more than eight consecutive hours. 3 – Not exceed ____ NTU at any time.
Lowest monthly percentage of samples that met Turbidity Performance Standard No. 1.	
Highest single turbidity measurement during the year	
Number of violations of any surface water treatment requirements	N/A

(a) A required process intended to reduce the level of a contaminant in drinking water.

(b) Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

** Any violation of a TT is marked with an asterisk. Additional information regarding the violation is provided below.*

Summary Information for Violation of a Surface Water TT

VIOLATION OF A SURFACE WATER TT				
TT Violation	**Explanation**	**Duration**	**Actions Taken to Correct the Violation**	**Health Effects Language**
None				

Summary Information for Operating Under a Variance or Exemption

DRAFT

SMALL WATER SYSTEM
2016 ANNUAL REPORT TO THE DRINKING WATER PROGRAM
FOR YEAR ENDING DECEMBER 31, 2016
[Section 116530 Health & Safety Code]

WATER SYSTEM INFORMATION	
Water System No.:	CA4810019
Water System Name:	SAVE MART DISTRIBUTION CENTER 802
Water System Classification: ⓘ	Nontransient Noncommunity Water System
Water System Ownership (See descriptions below):	Privately owned business (non-community)
Physical location: *(address line 1, address line 2, city, zip)*	700 CROCKER DRIVE VACAVILLE 95688
General Office Phone:ⓘ *(with area code)*	916-212-3609
Web site address:	howard.faulkner@savemart.com

Water System Ownership Descriptions:

- Local Government: e.g., city, county, or special district, local school district, junior colleges, county or community parks, etc.
- State or Federal Government: e.g., state or national park, BLM, USFS and COE campgrounds and recreation facilities, state hospitals, State universities and colleges, California Veterans Home, County or District Fairs and Expositions, Caltrans rest stop, military base, other state or federal facility
- Privately owned, non-PUC-regulated (Community Water System): e.g., mobile home park, apartment or condominium
- Privately owned business (non-community): e.g., church, private school, restaurant, amusement park, RV park/campground, motel, ranch/farm, factory, other business establishment

REPORT SUBMITTED BY:ⓘ	
Note: Your name and title, email address, and work phone number are disclosable report information that may be obtained through the Public Records Act.	
Name:	TOMAS GALINDO
Title:	CONTRACT WATER TREATMENT OPERATOR
Work phone:	209-826-5009
Cell phone:	209-704-5007
Email address:	westsidewater@aol.com

COMMENTS:ⓘ

1. Public Water System Contacts ⓘ

Click here to learn how to Modify, Add and Delete Contacts in the table below.

IMPORTANT: Each water system must have one and only one Administrative Contact AND one and only one Financial Contact. The same person may be both the Administrative and Financial Contacts.

Please provide an email address for the Administrative Contact as most email communication, particularly email blasts, from the Division of Drinking Water will be sent to the email address of the Administrative Contact.

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PHONE TYPE: Home – if you use your home or personal phone number as your business number, use the HOME phone type instead and leave the BUSINESS phone type blank.
Only the BUSINESS phone type will appear in Drinking Water Watch (https://sdwis.waterboards.ca.gov/PDWW/), which can be viewed by the public, if the General Office phone number is not provided (see Water System Information section under the Intro tab).

NAME, TITLE & ADDRESS	PHONE TYPE	PHONE NO.	EMAIL	CONTACT TYPE (pick all that apply)	
FAULKNER, HOWARD	Business Home	209-574-6299	Howard.Faulkner@SaveMart.com	** Delete Contact ** ✔ Administrative	Operator
MAINTENANCE MANAGER	Facsimile			✔ Financial	Emergency
700 CROCKER DRIVE	Mobile	916-849-3397		Designated Operator In Charge	Water Quality
VACAVILLE CA 95688	Emergency			Owner	✔ Legal
				Funding	Contract Operator
PEARL, STEVE	Business Home	707-446-5926	spearl@savemart.com	** Delete Contact ** Administrative	Operator
OPERATOR	Facsimile			Financial	Emergency
700 CROCKER DRIVE	Mobile			✔ Designated Operator In Charge	✔ Water Quality
VACAVILLE CA 95688	Emergency			Owner	Legal
				Funding	Contract Operator
PICCININI, BOB	Business Home	209-577-1600	bpiccinini@savemart.com	** Delete Contact ** Administrative	Operator
OWNER	Facsimile			Financial	Emergency
1800 STANDIFORD AVE	Mobile			Designated Operator In Charge	Water Quality
MODESTO CA 95350	Emergency			✔ Owner	Legal
				Funding	Contract Operator
GALINDO, TOM	Business Home	209-826-5009	westsidewater@aol.com	** Delete Contact ** Administrative	✔ Operator
CONTRACT OPERATOR	Facsimile	209-826-5332		Financial	Emergency
45 WEST G STREET	Mobile	209-704-5007		Designated Operator In Charge	✔ Water Quality
LOS BANOS CA 93635	Emergency			Owner	Legal
				Funding	Contract Operator
	Business Home			** Delete Contact ** Administrative	Operator
	Facsimile			Financial	Emergency

	Mobile			Designated Operator In Charge	Water Quality
	Emergency			Owner	Legal
				Funding	Contract Operator
	Business Home			** Delete Contact ** Administrative	Operator
	Facsimile			Financial	Emergency
	Mobile			Designated Operator In Charge	Water Quality
	Emergency			Owner	Legal
				Funding	Contract Operator
	Business Home			** Delete Contact ** Administrative	Operator
	Facsimile			Financial	Emergency
	Mobile			Designated Operator In Charge	Water Quality
	Emergency			Owner	Legal
				Funding	Contract Operator
	Business Home			** Delete Contact ** Administrative	Operator
	Facsimile			Financial	Emergency
	Mobile			Designated Operator In Charge	Water Quality
	Emergency			Owner	Legal
				Funding	Contract Operator
Add Additional Contact				(pick all that apply)	
JOHN DAVIS	Business	916-212-3609	john.davis@savemart.com	Administrative	Operator
EXECUTOR DIRECTOR OF DISTRIBUTION	Home			Financial	✔ Emergency
700 CROCKER	Facsimile Mobile	916-212-3609		Designated Operator In Charge	Water Quality
VACAVILLE CA 95688	Emergency			Owner	Legal
				Funding	Contract Operator
Add Additional Contact				(pick all that apply)	
--Contact Name--	Business	(999) 999-9999	XXXXX@XXXXX.XXX	Administrative	Operator
--Title--	Home	(999) 999-9999	XXXXX@XXXXX.XXX	Financial	Emergency
--Address Line 1-- --Address Line 2--	Facsimile Mobile	(999) 999-9999		Designated Operator In Charge	Water Quality

--City-- --ST-- 99999	Emergency	(999) 999-9999		Owner	Legal
				Funding	Contract Operator
Add Additional Contact				(pick all that apply)	
--Contact Name--	Business	(999) 999-9999	XXXXX@XXXXX.XXX	Administrative	Operator
--Title--	Home	(999) 999-9999		Financial	Emergency
--Address Line 1-- --Address Line 2--	Facsimile Mobile	(999) 999-9999	XXXXX@XXXXX.XXX	Designated Operator In Charge	Water Quality
--City-- --ST-- 99999	Emergency	(999) 999-9999		Owner	Legal
				Funding	Contract Operator
Add Additional Contact				(pick all that apply)	
--Contact Name--	Business	(999) 999-9999	XXXXX@XXXXX.XXX	Administrative	Operator
--Title--	Home	(999) 999-9999		Financial	Emergency
--Address Line 1-- --Address Line 2--	Facsimile Mobile	(999) 999-9999	XXXXX@XXXXX.XXX	Designated Operator In Charge	Water Quality
--City-- --ST-- 99999	Emergency	(999) 999-9999		Owner	Legal
				Funding	Contract Operator

COMMENTS:

2. POPULATION SERVED

Population Type	Population	Annual Operating Period	Begin Date		End Date	
			MM	DD	MM	DD
Residential[1]	0	Method Used to Determine Population: Other	1	1	12	31
Transient[2]	0		1	1	12	31
Nontransient[3]	1		1	1	12	31

MM = month, in 2-digit format DD = day, in 2-digit format

Descriptions:

[1]Residential – report the number of persons who reside within the water system service area for more than half of the year (excludes transient and nontransient populations). If year-round, the *Begin Date* would be 01/01 and the *End Date* would be 12/31.

[2]Transient – report the number of persons who are at the water system on the 60th busiest day of the year (excludes residential and nontransient populations. Report the *Begin Date* and *End Date* if the Transient use is seasonal.

[3]Nontransient – report the number of the persons who are at the water system for over 6 months per year (excludes residential and transient populations). Report the *Begin Date* and *End Date* if the Nontransient use is seasonal.

List the names of communities served by the system identifying both incorporated and unincorporated areas:

COMMENTS:

3. NUMBER OF SERVICE CONNECTIONS *(as of December 31, 2016)*

A. Active Service Connections:

Total Active Potable Water Connections currently in Division of Drinking Water database:	8

The total number of Service Connections as of December 31, 2016 must be reported as either Unmetered or Metered for each Service Connection Type as appropriate.

	Potable Water			Recycled Water		
TYPE **Do NOT report fire sprinkler connections and fire hydrants. These connections are not counted toward "service connections" for compliance purposes.**	**Unmetered**	**Metered**	**Total***	**Unmetered**	**Metered**	**Total***
Single-family Residential: single family detached dwellings	0	0	0	0	0	0
Multi-family Residential: Apartments, condominiums, town houses, duplexes and trailer parks	0	0	0	0	0	0
Commercial/Institutional: Retail establishments, office buildings, laundries, schools, prisons, hospitals, dormitories, nursing homes, hotels	0	0	0	0	0	0
Industrial: All manufacturing	0	3	3	0	0	0
Landscape Irrigation: Parks, play fields, cemeteries, median strips, golf courses	0	0	0	0	0	0
Agricultural Irrigation: Irrigation of commercially-grown crops	0	0	0	0	0	0
Total Active Connections*	0	3	3	0	0	0

*Calculated field

To update totals click here

NEW!

	Potable Water			Recycled Water		
TYPE	**Unmetered**	**Metered**	**Total***	**Unmetered**	**Metered**	**Total***
Other: Fire suppression, street cleaning, line flushing, construction meters, temporary meters	1	0	1	0	0	0

B. Number of Inactive Connections (all types) Include only service connections that have been physically disconnected (i.e., meter removed) from the water system. All other service connections should be considered as "Active."	

COMMENTS:

4. GROUNDWATER (GW) AND SURFACE WATER (SW) SOURCES

GROUNDWATER SOURCES (INCLUDING STANDBY SOURCES)

PSCode	Name	Activity
4810019-001	WELL 01	A

Add sources not listed above. Describe changes to sources above under "Comments".

PSCode	Name	Activity	Comments

SURFACE WATER INTAKES

PSCode	Name	Activity

Add sources not listed above. Describe changes to sources above under "Comments".

PSCode	Name	Activity	Comments

Are your water sources metered? Yes

DISCUSS CHANGES TO ABOVE SOURCES

If a STANDBY SOURCE was used in 2016, provide the following information.

Name of the Standby Source used in 2016:	No. of days the Standby Source was in operation:	Were customers notified? (Y/N)	Was DDW or Local County Staff notified? (Y/N)	Describe the reason the Standby Source was used:

COMMENTS:

5. WATER PRODUCED, PURCHASED AND SOLD

The **Maximum Day** is the day during 2016 with the highest total water usage. Provide the *date* for that day in Column B, then complete Columns C, D and E, indicating how much of the water on that day was from each source.

Units of Measure for this table: Gallons

Volumes are based on: METERED VOLUMES

A	B	C	D	E	F	G	H	I
	Potable Water						Non-potable (exclude recycled)	Recycled
	Date/ Month	Water Produced from Groundwater (Wells)	Water Produced from Surface Water[2]	Finished Water Purchased or Received from another PWS[5]	Total Amount of Potable Water[3*]	Water Sold to Another PWS[5]		
Maximum Day[1]	JULY	438900			438900			
January		354400	0	0	354400	0	0	0
February		243500	0	0	243500	0	0	0
March		312600	0	0	312600	0	0	0
April		399500	0	0	399500	0	0	0
May		353900	0	0	353900	0	0	0
June		356400	0	0	356400	0	0	0
July		438900	0	0	438900	0	0	0

August	305000	0	0	305000	0	0	0
September	211200	0	0	211200	0	0	0
October	143900	0	0	143900	0	0	0
November	208100	0	0	208100	0	0	0
December	405500	0	0	405500	0	0	0
Annual Total*	3732900	0	0	3732900	0	0	0
Percent Treated[4]	24						

PWS = Public Water System

*Calculated field. **If you do not have monthly production data to report, please report your Annual Total production in the row for January and enter "0" for all the other months.**

Non-potable = water supplies that do not enter the drinking water distribution system and are for non-potable uses only such as irrigation or toilet flushing

[1]Only report Maximum Day if it is actually measured or determined from production records. It should not be the average day demand during the maximum month of production.

[2]Do not include raw water purchased; report only volume of water that was treated.

[3](F) Total Amount of Potable Water = Sum of Columns (C), (D) and (E), automatically calculated. To update, click below

To update totals click here

[4]This is the percentage of the total annual volume for Groundwater produced that was provided treatment to meet drinking water standards other than precautionary disinfection and flouridation.

[5]If water was *Purchased* from or *Sold* to another PWS, complete the table below:

Specify whether water was *Purchased* or *Sold*	Name of PWS

If recycled water was *supplied* to *your customers*, complete the table below:

Specify the level of treatment (e.g., tertiary, disinfected secondary)	Name of Recycled Water supplier

COMMENTS:

6a. WATER RATES

If you have questions about completing this section of the report, please contact Kathy.Frevert@Waterboards.ca.gov or call (916) 322-5274.

NEW!

Indicate the type of residential water rate structure used by your water system: We Do Not Charge A Water Rate (specify why in the Comments box)

If tiered, what is the number of tiers?	Not Tiered

Date of most recent update to the rate structure: **MM/DD/YYYY**	1/1/2017
Describe the changes that were made in the update:	N/A
What is your billing frequency other	
What is your new connection fee?	0
Date of most recent update to the new connection fee: **MM/DD/YYYY**	1/1/2017

Complete the table below providing specific water rates applied to your customers:

Connection Type	FLAT BASE RATE (FBR)	If FBR + UUR, what is the volume allowed before UUR applies	UNIFORM USAGE RATE (UUR)	VARIABLE BASE RATE (provide range) (VBR)		VARIABLE USAGE RATE (provide range) (VUR)	
	$ (Base)	HCF ⓘ	$ per HCF	$ Low	$ High	$ per HCF Low	$ per HCF High
RESIDENTIAL ⓘ							
Single-family Residential	0	0	0	0	0	0	0
Multi-family Residential	0	0	0	0	0	0	0
Do you provide lifeline/low income subsidies?			No				
If Yes, provide rates:							
If yes, what percentage of residential customers receives this subsidy? (Example: X %)				%			
NON-RESIDENTIAL ⓘ							
Commercial/Institutional	0	0	0	0	0	0	0
Industrial	0	0	0	0	0	0	0
Landscape Irrigation	0	0	0	0	00	0	0
Agricultural Irrigation	0	0	0	0	0	0	0
Other							
Do you have fire suppression surcharges?			No				
If Yes, provide rates:							
Do you have other surcharges?			No				
What are the other surcharges?							
If Yes, provide rates:							

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For each of the three water volumes shown below, provide what would be the monthly water bill for a single-family residential customer. Include all fees and service charges associated with water services that this customer would pay when their household used the specified amount of water.

Amount of water delivered to customer:	Bill amount (including all charges/fees associated with the amount of water used):
NEW!	
a. 6 HCF	0 Dollars/month
b. 12 HCF	0 Dollars/month
c. 24 HCF	0 Dollars/month

NOTE: If this is not a "Community" Water System or if individual customers do not pay a separate bill for water enter "0".
If bill amount would vary by season, use the month or time period with the highest water consumption.

HCF means "hundred cubic feet". There are 748 gallons in 100 cubic feet.

6b. WATER DELIVERIES

Units of Measure for this table: Gallons

Provide monthly **metered** water deliveries in the table below.

A	B	C	D	E	F	G	H	I	J
	Single-family Residential	Multi-family Residential	Commercial/ Institutional	Industrial	Landscape Irrigation	Other	Total Urban Retail[1*]	Agricultural	Other PWS
Check if Recycled Water is included:	☐	☐	☐	☐	☐	☐		☐	☐
January	0	0	0	0	0	0	0	0	0
February	0	0	0	0	0	0	0	0	0
March	0	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0	0
August	0	0	0	0	0	0	0	0	0
September	0	0	0	0	0	0	0	0	0
October	0	0	0	0	0	0	0	0	0
November	0	0	0	0	0	0	0	0	0
December	0	0	0	0	0	0	0	0	0
Total*	0	0	0	0	0	0	0	0	0

PWS = Public Water System

*Calculated field

[1]Total Urban Retail = Sum of Columns (B) thru (G), automatically calculated. To update, click below

To update totals click here

COMMENTS:

7. WATER QUALITY

ANNUAL NITRATE SAMPLING

Regulations require a minimum of **annual** sampling for nitrate. If any nitrate result is >= 1/2 the MCL (Maximum Contaminant Level) of 10 mg/l as nitrogen (i.e., a result of >= 5 mg/l
as nitrogen) then quarterly monitoring must be initiated.

Did your system conduct monitoring for nitrate during 2016 from each source?	Yes

NOTE: If there were any sources that were not monitored because they were offline during 2016, you must contact your local regulatory agency to avoid an enforcement action for failure to monitor.

BACTERIOLOGICAL SAMPLE SITING PLAN

The coliform monitoring regulations require that an updated sample-siting plan be submitted at least every 10 years, and at any time the plan no longer ensures representative monitoring of the system (Section 64422 of Title 22).

Date of current bacteriological sample siting plan:	10/01/2016

COMMENTS:

8. WATER TREATMENT

Treatment Plant	Required Treatment Plant Operator Classification

If treatment was added or changed in any way in 2016, provide a brief description and identify the water source

TD = Treatment or Distribution operator at any level

NR, N/A, NA = There are no facilities subject to the Certified Treatment Plant Operator requirements

DIRECT ADDITIVES

Are all chemicals used NSF/ANSI Standard 60 certified?	Yes

INDIRECT ADDITIVES

As of March 9, 2008, a water system shall not use any chemical, material, lubricant, or product in the production, treatment or distribution of drinking water that comes in contact with the drinking water that does not have certification of meeting NSF/ANSI standard 61.

Does your water system have procedures to ensure all future equipment and materials meet this standard?	Yes

If you have any questions on the requirements related to indirect additives, you may contact your local regulatory agency.

COMMENTS:

9. CROSS-CONNECTION CONTROL

	Total Number in System	Number Installed in 2016	Number Tested in 2016	Number Failed in 2016	Number Repaired/ Replaced
Backflow Assemblies on the Service Connections or Meter (Reduced Pressure Principle and Double Check Valve assemblies)	3	0	0	0	0

Backflow Assemblies On-site but not on the Service Connections or Meter (Reduced Pressure Principle and Double Check Valve assemblies)	0	0	0	0	0
Air-gap Separation	25	0			

No. of *Inactive* Backflow Prevention Assemblies in water system in 2016 :			
Date of last cross-connection control survey done on the system:			3/11/2010
Cross Connection Control Program Coordinator			
Name:			HOWARD FAULKNER
Certification Number:			
Business Phone:	916-849-3397	Email Address:	Howard.faulkner@savemart.com
Certification or training received:			

Describe any cross-connection incidents that occurred during 2016:

COMMENTS:

10. CONSUMER CONFIDENCE REPORT *(does not apply to Transient Noncommunity water systems)*

THE 2016 CCR MUST BE DISTRIBUTED TO YOUR CUSTOMERS AND A COPY SUBMITTED TO YOUR LOCAL REGULATORY AGENCY BY JULY 1, 2017. IN ADDITION, PUBLIC WATER SYSTEMS THAT ARE ALSO REGULATED BY THE CALIFORNIA PUBLIC UTILITIES COMMISSION (PUC) MUST MAIL A COPY OF THEIR CCR TO THE PUC BY JULY 1, 2017.

CERTIFICATION MUST BE SUBMITTED TO YOUR LOCAL REGULATORY AGENCY BY OCTOBER 1, 2017, STATING THAT THE 2016 CCR HAS BEEN DISTRIBUTED TO CUSTOMERS AND THAT THE INFORMATION IS CORRECT.

The CCR guidance, CCR template, and the certification form can be obtained from the Division of Drinking Water web site at:http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/CCR.shtml

Indicate the date your 2016 CCR was distributed or will be distributed to your customers:	06/30/2017 mm/dd/yyyy

COMMENTS:

11. OPERATOR CERTIFICATION

A. Please list the State certified Water **Treatment Plant Operators** employed by your water system that supervise and direct the operation of your water treatment plants, beginning with the chief operator(s).

Your Highest Treatment System Classification is: **D1**

If you do not have a Certified Distribution System Operator, put "NONE" in **each** column of the first row.

Treatment Operator Name (First name Last name)	Grade of Treatment Operator (1, 2, 3, 4, or 5)	Chief or Shift[1] (C, S or X)	Treatment Operator Number (4 or 5 digits)	Treatment Certification Expiration Date (MM/DD/YYYY)
TOMAS GALINDO	T3	C	31231	2/1/2019

[1]Use "C" for Chief Operator and "S" for Shift Operator. If neither, put an "X". Do not leave blank.

Do your Chief and Shift Treatment Plant Operators have the minimum level required? Yes

B. Please list the State certified Water **Distribution System Operators** employed by your water system that supervise and direct the operation of your distribution systems, beginning with the chief operator(s).

Your Distribution System Classification is: D1

If you do not have a Certified Distribution System Operator, put "NONE" in **each** column of the first row.

Distribution Operator Name (First name Last name)	Grade of Distribution Operator (1, 2, 3, 4, or 5)	Chief or Shift[1] (C, S or X)	Distribution Operator Number (4 or 5 digits)	Distribution Certification Expiration Date (MM/DD/YYYY)
TOMAS GALINDO	D2	C	36483	8/1/2018

[1]Use "C" for Chief Operator and "S" for Shift Operator. If neither, put an "X". Do not leave blank.

Do your Chief and Shift Distribution System Operators have the minimum level required? Yes

COMMENTS:

12. WATER SYSTEM IMPROVEMENTS

The California Waterworks Standards (Section 64556) require an amended permit for any of the following improvements or modifications:

- Addition of a new distribution reservoir with a capacity of 100,000 gallons or more
- Modification or extension of the existing distribution system using an alternative to the requirements of the California Waterworks Standards (see Sections 64570 through 64578)
- Modification of the water supply by:
  - Adding a new source
  - Changing the status of an existing source (for example, active to standby) or
  - Changing or altering a source, such that the quality or quantity of water supply could be affected
- Any addition or change in treatment, including
  - Design capacity
  - Process
- Expansion of the existing service area by 20 percent or more of the number of service connections specified in your current permit.

If your water system made any improvements or modifications during 2016 for which a permit was not obtained, please describe the improvements or modifications below.

Indicate any planned improvements or modifications for 2017.

COMMENTS:

13. COMPLAINTS REPORTED (WRITTEN OR VERBAL)

Type of Complaint	No. of Complaints Reported by Customers	No. of Complaints Investigated	No. of Complaints reported to the Division of Drinking Water or Local County Staff	Brief Description of Cause and Corrective Action taken
Taste and Odor				
Color				
Turbidity				
Visible Organisms				
Pressure (High or Low)				
Water Outages				
Illnesses (Waterborne)				
Other (Specify)				
Total No. of Complaints*	0	0	0	

*Calculated field

To update totals click here

COMMENTS:

14. SYSTEM PROBLEMS

Type of Problem	No. of Problems	No. of Problems Investigated	No. of Problems Reported to the Division of Drinking Water or Local County Staff	Brief Description of Cause and Corrective Action Taken
Service Connection Breaks/ Leaks				
Main Breaks/Leaks				
Water Outages				
Boil Water Orders				
Total*	0	0	0	

To update totals click here

COMMENTS:

15. ONGOING WATER SYSTEM VIOLATIONS

Is your water system operating under USEPA, Division or LPA enforcement for a continuous violation?	No

If yes, respond to the following:

Type of violation (for example, specify "Nitrate MCL" violation if your wells exceeds the nitrate MCL of 45 mg/L	
Dates in 2016 that public notification was provided to users	
Corrective action taken in 2016	
Was bottled water provided to users?	--Pick one--
If yes, how was bottled water provided, for example, direct delivery?	
Describe anticipated schedule to return to compliance	

COMMENTS:

16. WATER CONSERVATION AND DROUGHT PREPAREDNESS

Date of your revised Drought Preparedness Plan, if any:	
If you experienced water shortages in 2016, please estimate the amount of shortfall in millions of gallons:	
Did drought conditions cause you to activate emergency standby wells in 2016?	No
Do you project water shortages in the current calendar year?	No
Did you implement NEW water conservation measures in 2016?	No
If you implemented NEW water conservation measures in 2016, please estimate how much water was conserved in millions of gallons: (MG) % reduction in demand	
Do you anticipate having to go to mandatory rationing in the upcoming year?	No
Do you routinely monitor the *static* water levels in your wells?	No
Do you routinely monitor the *pumping* water levels in your wells?	No
Are these levels recovering, declining or steady?:	Not Applicable (no wells)

Please list any other long term actions you are considering or planning:

COMMENTS:

Disclosure: Be advised that Sections 116725 and 116730 of the California Health and Safety Code states that any person who knowingly makes any false statement on any report or document submitted for the purposes of compliance may be liable for a civil penalty not to exceed five thousand dollars ($5,000) for each separate violation for each day that the violation continues. In addition, the violators may be prosecuted in criminal court and upon conviction, be punished by a fine of not more than $25,000 for each day of the violation, or be imprisoned in county jail not to exceed one year, or both the fine and imprisonment.

To Interested Parties:

2015-2016 ANNUAL REPORT ANNUAL REPORT FOR STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITIES

Attached is the 2015-20165 annual report that must be mailed to your Regional Board office by July 15, 2016. Dischargers within the Los Angeles Regional Board are required to electronically submit their annual reports via the Storm Water Multi-Application Reporting and Tracking System (SMARTS), email with a PDF attachment(s) to losangeles@waterboards.ca.gov, or mail a disk. Although electronic submittals are not mandatory for dischargers in other regions, we encourage all dischargers to register and use SMARTS. We anticipate that a new Industrial General Permit (IGP) will be adopted sometime next year that will mandate electronic reporting for future reporting years.

To register to use SMARTS please fill out the LRP Registration Form and mail it back to: SMARTS Registration, P.O. Box 1977, Sacramento, CA 95812. Once a complete registration form is received, instructions and a Secret Code Number will be emailed. The Secret Code Number is used to link your SMARTS ID to the WDID Number.

For SMARTS registration questions or information please contact the SMARTS help center at 1-866-563-3107 or by email at stormwater@waterboards.ca.gov.

To receive email updates on Storm Water Industrial permitting issues including updates on the IGP reissuance process (hearings, workshops, schedules, etc.), please sign up at http://www.waterboards.ca.gov/resources/email_subscriptions/swrcb_subscribe.shtml The Storm Water program currently maintains five email lists:

- Storm Water Database Issues
- Storm Water Construction Permitting Issues
- Storm Water Industrial Permitting Issues
- Storm Water Municipal Permitting Issues
- Sustainable Development

Sincerely,

Storm Water Section State of California

FORM 2-QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

- Quarterly dry weather visual observations are required of each authorized NSWD.
- Observe each authorized NSWD source, impacted drainage area, and discharge location.
- Authorized NSWDs must meet the conditions provided in Section D (pages 5-6), of the General Permit.
- Make additional copies of this form as necessary.

QUARTER: **JULY-SEPT.** DATE: 9 /30/15	**Observers Name:** Howard Faulkner **Title:** Manager of Facility Maintenance **Signature:** _____ **No Observation was done**	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☐ **YES** ☒ **NO** If **YES**, complete reverse side of this form.
QUARTER: **OCT.-DEC.** DATE: 11 /18 /16	**Observers Name:** Howard Faulkner **Title:** Manager of Facility Maintenance **Signature:** _____	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☒ **YES** ☐ **NO** If **YES**, complete reverse side of this form.
QUARTER: **JAN.-MARCH** DATE: 1/13 /16	**Observers Name:** Howard Faulkner **Title:** Manager of Facility Maintenance **Signature:** _____	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☒ **YES** ☐ **NO** If **YES**, complete reverse side of this form.
QUARTER: **APRIL-JUNE** DATE: 4/20/16	**Observers Name:** Howard Faulkner **Title:** Manager of Facility Maintenance **Signature:** _____	**WERE ANY AUTHORIZED NSWDs DISCHARGED DURING THIS QUARTER?** ☒ **YES** ☐ **NO** If **YES**, complete reverse side of this form.

FORM 2-QUARTERLY VISUAL OBSERVATIONS OF AUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

DATE /TIME OF OBSERVATION	SOURCE AND LOCATION OF AUTHORIZED NSWD EXAMPLE: Air conditioner Units on Building C	NAME OF AUTHORIZED NSWD EXAMPLE: Air conditioner condensate	DESCRIBE AUTHORIZED NSWD CHARACTERISTICS Indicate whether authorized NSWD is clear, cloudy, or discolored, causing staining, contains floating objects or an oil sheen, has odors, etc.		DESCRIBE ANY REVISED OR NEW BMPs AND PROVIDE THEIR IMPLEMENTATION DATE
			At the NSWD Source	At the NSWD Drainage Area and Discharge Location	
9 /30 /15 8 :00 ■ AM ☐ PM	**None**				
11 /18/15 10:00 ■ AM ☐ PM	**Fire System 2" Drain Test**	**Run off did not reach storm drains**	**Run off was clear and had no odor.**	**Observed all 27 systems**	
1/13 /16 8:00 ■ AM ☐ PM	**Fire System 2" Drain Test**	**Run off did not reach storm drains**	**Run off was clear and had no odor.**	**Observed all 27 systems**	
4 /20 /16 11:00 ■ AM ☐ PM	**Fire System 2" Drain Test**	**Run off did not reach storm drains**	**Run off was clear and had no odor.**	**Observed all 27 systems**	
/ / : ☐ AM ☐ PM					

FORM 3-QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED

NON-STORM WATER DISCHARGES (NSWDs)

- Unauthorized NSWDs are discharges (such as wash or rinse waters) that do not meet the conditions provided in Section D (pages 5-6) of the General Permit.
- Quarterly visual observations are required to observe current and detect prior unauthorized NSWDs.
- Quarterly visual observations are required during dry weather and at all facility drainage areas.
- Each unauthorized NSWD source, impacted drainage area, and discharge location must be identified and observed.
- Unauthorized NSWDs that can not be eliminated within 90 days of observation must be reported to the Regional Board in accordance with Section A.10.e of the General Permit.
- Make additional copies of this form as necessary.

QUARTER: **JULY-SEPT.** **DATE/TIME OF OBSERVATIONS** 7/1/15 8:00 ■ AM ☐ PM	**Observers Name:** Peter Hartz **Title:** Maintenance Foreperson **Signature:**	**WERE UNAUTHORIZED NSWDs OBSERVED?** ■ YES ☐ NO **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ YES ■ NO	If **YES** to either question, complete reverse side.
QUARTER: **OCT.-DEC.** **DATE/TIME OF OBSERVATIONS** 11/18/14 10:15 ■ AM ☐ PM	**Observers Name:** Howard Faulkner **Title:** Manager of Facility Maintenance **Signature:**	**WERE UNAUTHORIZED NSWDs OBSERVED?** ☐ YES ■ NO **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ YES ■ NO	If **YES** to either question, complete reverse side.
QUARTER: **JAN.-MARCH** **DATE/TIME OF OBSERVATIONS** 1/13/15 8:00 ■ AM ☐ PM	**Observers Name:** Howard Faulkner **Title:** Manager of Facility Maintenance **Signature:**	**WERE UNAUTHORIZED NSWDs OBSERVED?** ☐ YES ■ NO **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ YES ■ NO	If **YES** to either question, complete reverse side.
QUARTER: **APRIL-JUNE** **DATE/TIME OF OBSERVATIONS** 4/20/15 11:00 ■ AM ☐ PM	**Observers Name:** Howard Faulkner **Title:** Manager of Facility Maintenance **Signature:**	**WERE UNAUTHORIZED NSWDs OBSERVED?** ☐ YES ■ NO **WERE THERE INDICATIONS OF PRIOR UNAUTHORIZED NSWDs?** ☐ YES ☐ NO	If **YES** to either question, complete reverse side.

FORM 3 QUARTERLY VISUAL OBSERVATIONS OF UNAUTHORIZED NON-STORM WATER DISCHARGES (NSWDs)

OBSERVATION DATE (FROM REVERSE SIDE)	NAME OF UNAUTHORIZED NSWD EXAMPLE: Vehicle Wash Water	SOURCE AND LOCATION OF UNAUTHORIZED NSWD EXAMPLE: NW Corner of Parking Lot	DESCRIBE UNAUTHORIZED NSWD CHARACTERISTICS Indicate whether unauthorized NSWD is clear, cloudy, discolored, causing stains; contains floating objects or an oil sheen, has odors, etc.		DESCRIBE CORRECTIVE ACTIONS TO ELIMINATE UNAUTHORIZED NSWD AND TO CLEAN IMPACTED DRAINAGE AREAS. PROVIDE UNAUTHORIZED NSWD ELIMINATION DATE.
			AT THE UNAUTHORIZED NSWD SOURCE	AT THE UNAUTHORIZED NSWD AREA AND DISCHARGE LOCATION	
7/1 /15 8:00 ■ AM ☐ PM	Fire System #17 Underground main Pipe broke	N.W. corner of main building	Clear mixed with mud and gravel.	Same	Shut down main valve and repaired broken pipe.
/ / : ☐ AM ☐ PM					
/ / : ☐ AM ☐ PM					
/ / : ☐ AM ☐ PM					

FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

SIDE A

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.
- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.
- Until a monthly visual observation is made, record any eligible storm events that do not result in a storm water discharge and note the date, time, name, and title of who observed there was no storm water discharge.

Observation Date: October ____ 2015 Observers Name: _____ Title: _____ Signature: _____ No Rain	Drainage Location Description	#1 SW-1	#2 SW-2	#3	#4
	Observation Time	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: November_2_ 2015 Observers Name: Howard Faulkner Title: Manager of Facility Maintenance Signature: _____	Drainage Location Description	#1	#2	#3	#4
	Observation Time	8:00 ☐ P.M. ■ A.M.	8 :00 ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	7:15 ☐ P.M. ■ A.M.	7:15 ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☒	YES ☐ NO ■	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: December_10__ 2015 Observers Name: Howard Faulkner Title: Manager of Facility Maintenance Signature: _____	Drainage Location Description	#1	#2	#3	#4
	Observation Time	12:30 ☐ P.M. ■ A.M.	12:30 ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	11:45 ☐ P.M. ■ A.M.	11:45 ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☒	YES ☐ NO ■	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: January_6__ 2016 Observers Name: Howard Faulkner Title: Manager of Facility Maintenance Signature: _____	Drainage Location Description	#1	#2	#3	#4
	Observation Time	7:00 ☐ P.M. ■ A.M.	7:00 ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	Overnight ☐ P.M. ☐ A.M.	overnight ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☒	YES ☐ NO ■	YES ☐ NO ☐	YES ☐ NO ☐

FORM 4-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

DATE/TIME OF OBSERVATION (From Reverse Side)	DRAINAGE AREA DESCRIPTION EXAMPLE: Discharge from material storage Area #2	DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.	IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS EXAMPLE: Oil sheen caused by oil dripped by trucks in vehicle maintenance area.	DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION
2 / 17 /16 : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				
/ / : ☐ AM ☐ PM				

FORM 4 (Continued)-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

- Storm water discharge visual observations are required for at least one storm event per month between October 1 and May 31.
- Visual observations must be conducted during the first hour of discharge at all discharge locations.
- Discharges of temporarily stored or contained storm water must be observed at the time of discharge.
- Indicate "None" in the first column of this form if you did not conduct a monthly visual observation.
- Make additional copies of this form as necessary.
- Until a monthly visual observation is made, record any eligible storm events that do not result in a storm water discharge and note the date, time, name, and title of who observed there was no storm water discharge.

Observation Date: February 17 2016 Observers Name: Howard Faulkner Title: Manager of Facility Maintenance Signature:	Drainage Location Description	#1 SW-1	#2 SW-2	#3	#4
	Observation Time	1:30 ■ P.M. ☐ A.M.	1:30 ■ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	11:30 ☐ P.M. ■ A.M.	11:30 ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☒	YES ☐ NO ■	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: March 11 2015 Observers Name: Howard Faulkner Title: Manager of Facility Maintenance Signature:	Drainage Location Description	#1 SW-1	#2 SW-2	#3	#4
	Observation Time	7:00 ☐ P.M. ■ A.M.	7:00 ☐ P.M. ■ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	O/N ☐ P.M. ☐ A.M.	O/N ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☒	YES ☐ NO ■	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: April 27 2015 Observers Name: Howard Faulkner Title: Manager of Facility Maintenance Signature:	Drainage Location Description	#1	#2	#3	#4
	Observation Time	2:15 ■ P.M. ☐ A.M.	2:15 ■ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	1:20 ■ P.M. ☐ A.M.	1:20 ■ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐
Observation Date: May 2015 Observers Name: NONE Title: Manager of Facility Maintenance Signature:	Drainage Location Description	#1	#2	#3	#4
	Observation Time	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Time Discharge Began	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.	: ☐ P.M. ☐ A.M.
	Were Pollutants Observed (If yes, complete reverse side)	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐	YES ☐ NO ☐

FORM 4 (Continued)-MONTHLY VISUAL OBSERVATIONS OF STORM WATER DISCHARGES

DATE/TIME OF OBSERVATION (From Reverse Side)	DRAINAGE AREA DESCRIPTION EXAMPLE: Discharge from material storage Area #2	DESCRIBE STORM WATER DISCHARGE CHARACTERISTICS Indicate whether storm water discharge is clear, cloudy, or discolored; causing staining; containing floating objects or an oil sheen, has odors, etc.	IDENTIFY AND DESCRIBE SOURCE(S) OF POLLUTANTS EXAMPLE: Oil sheen caused by oil dripped by trucks in vehicle maintenance area.	DESCRIBE ANY REVISED OR NEW BMPs AND THEIR DATE OF IMPLEMENTATION
___/___/___ ___:___ ☐ AM ☐ PM				
___/___/___ ___:___ ☐ AM ☐ PM				
___/___/___ ___:___ ☐ AM ☐ PM				
___/___/___ ___:___ ☐ AM ☐ PM				
___/___/___ ___:___ ☐ AM ☐ PM				

FORM 5-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

EVALUATION DATE: 6/16/16 INSPECTOR NAME: Howard Faulkner TITLE: Manager of Facility Maintenance SIGNATURE: _____

POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)			Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
General Warehouse	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?	☐ YES ■ NO	If yes, to either question, complete the next two columns of this form	
	ARE ADDITIONAL/REVISED BMPs NECESSARY?	☐ YES ■ NO		
Pallet Dock	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?	☐ YES ■ NO	If yes, to either question, complete the next two columns of this form	
	ARE ADDITIONAL/REVISED BMPs NECESSARY?	☐ YES ■ NO		
Truck Wash	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?	☐ YES ■ NO	If yes, to either question, complete the next two columns of this form	
	ARE ADDITIONAL/REVISED BMPs NECESSARY?	☐ YES ■ NO		
Cardboard Stacks	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED?	☐ YES ■ NO	If yes, to either question, complete the next two columns of this form	
	ARE ADDITIONAL/REVISED BMPs NECESSARY?	☐ YES ■ NO		

FORM 5 (Continued)-ANNUAL COMPREHENSIVE SITE COMPLIANCE EVALUATION
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY BMP STATUS

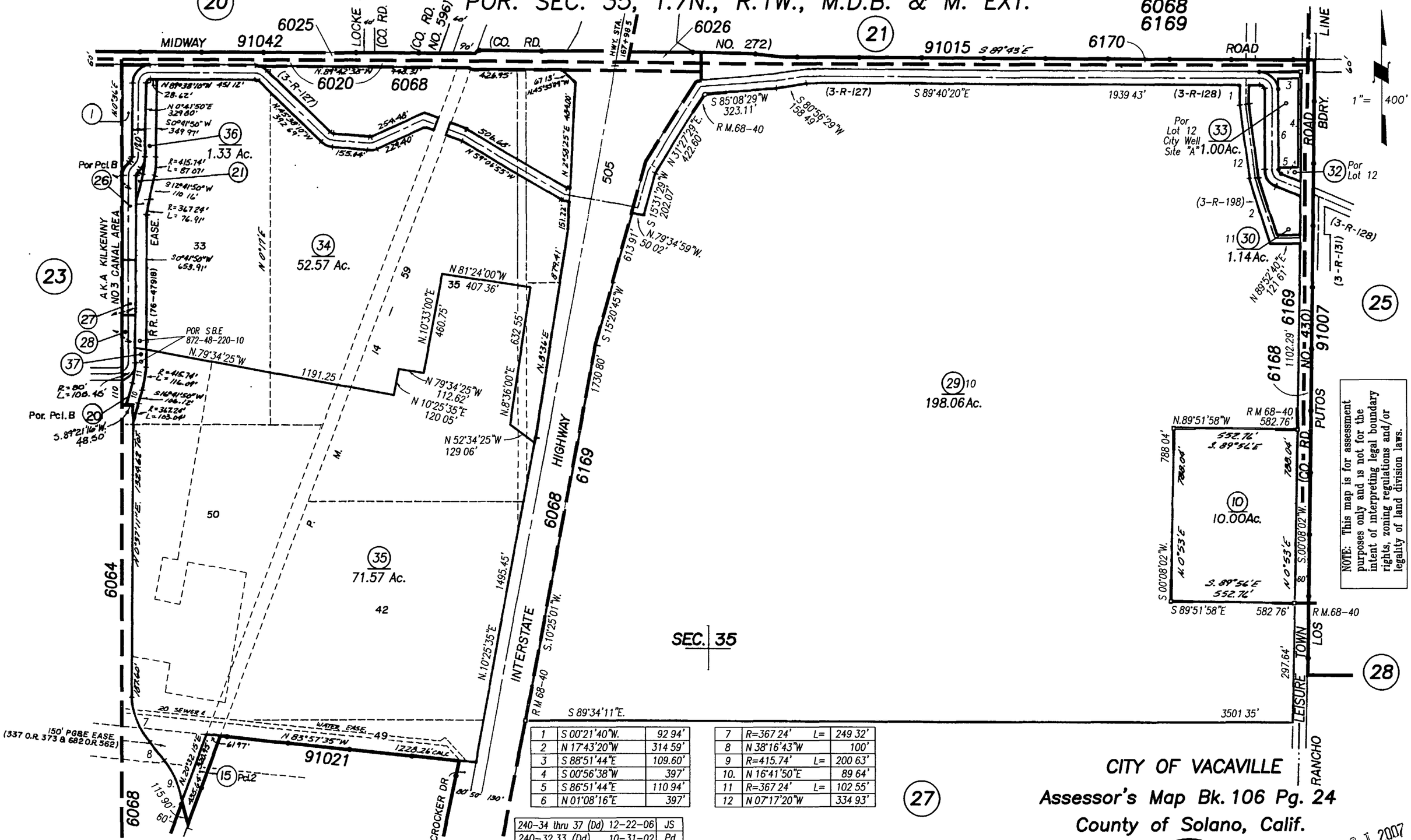
EVALUATION DATE: ___/___/___ INSPECTOR NAME: _____ TITLE: _____ SIGNATURE: _____

POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐YES ☐NO			
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐YES ☐NO			
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐YES ☐NO			
POTENTIAL POLLUTANT SOURCE/INDUSTRIAL ACTIVITY AREA (as identified in your SWPPP)	HAVE ANY BMPs NOT BEEN FULLY IMPLEMENTED? ☐YES ☐NO	If yes, to either question, complete the next two columns of this form	Describe deficiencies in BMPs or BMP implementation	Describe additional/revised BMPs or corrective actions and their date(s) of implementation
	ARE ADDITIONAL/REVISED BMPs NECESSARY? ☐YES ☐NO			

POR. LOT 38, RANCHO LOS PUTOS
POR. SEC. 35, T.7N., R.1W., M.D.B. & M. EXT.

Tax Area Code 6068 6169

106-24



1	S 00°21'40"W.	92 94'
2	N 17°43'20"W	314 59'
3	S 88°51'44"E	109.60'
4	S 00°56'38"W	397'
5	S 86°51'44"E	110 94'
6	N 01°08'16"E	397'

7	R=367 24'	L=	249 32'
8	N 38°16'43"W		100'
9	R=415.74'	L=	200 63'
10.	N 16°41'50"E		89 64'
11	R=367 24'	L=	102 55'
12	N 07°17'20"W		334 93'

REVISION	DATE	BY
240-34 thru 37 (Dd)	12-22-06	JS
240-32,33 (Dd)	10-31-02	Pd
240-29-31 R M	5-8-98	S W
SBE 96-004	11-30-95	Pd

NOTE Assessor's Block Numbers Shown in Ellipses
Assessor's Parcel Numbers Shown in Circles

Timothy Paige Tract, R.M. Bk. 1 Pg. 106
Mission Land & Development Co., R.M. Bk. 68 Pg. 40

CITY OF VACAVILLE
Assessor's Map Bk. 106 Pg. 24
County of Solano, Calif.

07-08

MAY 3 1 2007

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Print Email Reports Export Reports

Ref ID: 1047

Property Detail Report

For Property Located At :

700 CROCKER DR, VACAVILLE, CA 95688-8707

CoreLogic RealQuest

Owner Information

Owner Name:	LUCKY FLA NOCAL INVESTOR LLC
Mailing Address:	PO BOX 4278, MODESTO CA 95352-4278 B900
Vesting Codes:	/ /

Location Information

Legal Description:	SUB BK-PG 14-59 LOT A		
County:	SOLANO, CA	APN:	0106-240-350
Census Tract / Block:	2529.04 / 2	Alternate APN:	0106-240-230
Township-Range-Sect:		Subdivision:	
Legal Book/Page:		Map Reference:	67-A3 /
Legal Lot:	A	Tract #:	
Legal Block:		School District:	TRAVIS VACAVILLE
Market Area:		School District Name:	
Neighbor Code:		Munic/Township:	VACAVILLE

Owner Transfer Information

Recording/Sale Date:	12/22/2006 /	Deed Type:	DEED (REG)
Sale Price:		1st Mtg Document #:	
Document #:	162306		

Last Market Sale Information

Recording/Sale Date:	/	1st Mtg Amount/Type:	/
Sale Price:		1st Mtg Int. Rate/Type:	/
Sale Type:		1st Mtg Document #:	
Document #:		2nd Mtg Amount/Type:	/
Deed Type:		2nd Mtg Int. Rate/Type:	/
Transfer Document #:		Price Per SqFt:	
New Construction:		Multi/Split Sale:	
Title Company:			
Lender:			
Seller Name:			

Prior Sale Information

Prior Rec/Sale Date:	/	Prior Lender:	
Prior Sale Price:		Prior 1st Mtg Amt/Type:	/
Prior Doc Number:		Prior 1st Mtg Rate/Type:	/
Prior Deed Type:			

Property Characteristics

Year Built / Eff:	/	Total Rooms/Offices		Garage Area:	
Gross Area:		Total Restrooms:		Garage Capacity:	
Building Area:		Roof Type:		Parking Spaces:	
Tot Adj Area:		Roof Material:		Heat Type:	
Above Grade:		Construction:		Air Cond:	
# of Stories:		Foundation:		Pool:	
Other Improvements:	Building Permit	Exterior wall:		Quality:	
		Basement Area:		Condition:	

Site Information

Zoning:		Acres:	71.57	County Use:	WAREHOUSING (4444)
Lot Area:	3,117,589	Lot Width/Depth:	x	State Use:	
Land Use:	WAREHOUSE	Commercial Units:		Water Type:	
Site Influence:		Sewer Type:		Building Class:	

Tax Information

Total Value:	$39,764,917	Assessed Year:	2016	Property Tax:	$499,657.44
Land Value:	$6,341,000	Improved %:	84%	Tax Area:	006068
Improvement Value:	$33,423,917	Tax Year:	2016	Tax Exemption:	
Total Taxable Value:	$39,764,917				

Print Email Reports Export Reports

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT
1947 Galileo Court, Suite 103; Davis, CA 95618
(530) 757-3659; Fax (530) 757-3670

PERMIT NOTIFICATION
FORM 08

Complete the following information and submit to the District upon completion of equipment construction/modification, as authorized by the Authority to Construct (ATC). This form serves as a Permit to Operate (PTO) application and must be submitted within forty-eight (48) hours of initial operation. This form serves as notification that the equipment is ready for operation and inspection. Return the completed form by email to Notify@ysaqmd.org, by fax to (530) 757-3670, and/or by mail to: YSAQMD, 1947 Galileo Court, Suite 103; Davis, CA, 95618. Upon receipt of this card, the District will contact you to schedule an inspection time (if applicable).

Company Name Save Mart Supermarkets

ATC Number C-17-03

Date Construction Began (MM/DD/YR) 1978

Date Operation Began (MM/DD/YR) 1978

Company Contact Name JOHN DAVIS

Contact Phone Number 916-784-8853 **Email Address** JOHN.DAVIS@SAVEMART.COM

Print Name of Responsible Official HOWARD W. FAULKNER

Signature of Responsible Official Howard W. Faulkner 3-23-17

*Signature Required** *Date*

Instructions:

Date Construction Began is the date process equipment began being installed. For ATCs which approve modifications of conditions (i.e. no physical construction was required), leave this field blank.

Date Operation Began is the date that "shakedown" was completed and operation for the purpose of sellable product or intended use began. For ATCs which approve modifications of conditions, enter the date the equipment was operated using the revised conditions.

Company Contact Name, Phone Number and Email Address should be the person whom the District can contact to schedule any necessary start up inspection.

Responsible Official is the person who signed the ATC application. This Notification form may be transmitted by facsimile (fax) or electronic mail (email), and any such signature* shall have the same legal effect as an original.

FOR DISTRICT USE ONLY

Date Stamp Received _____ PTO Number _____

YOLO-SOLANO AIR QUALITY MANAGEMENT DISTRICT
1947 Galileo Court, Suite 103; Davis, CA 95618
(530) 757-3659; Fax (530) 757-3670

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Company Name Save Mart Supermarkets

ATC Number C-17-04

Date Construction Began (MM/DD/YR) 1978

Date Operation Began (MM/DD/YR) 1978

Company Contact Name JOHN DAVIS

Contact Phone Number 916-784-8853 **Email Address** JOHN.DAVIS@SAVEMART.COM

Print Name of Responsible Official HOWARD W. FAULKNER

Signature of Responsible Official Howard W. Faulkner 3-23-17

*Signature Required** *Date*

Instructions:

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1947 Galileo Court, Suite 103; Davis, CA 95618
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Company Name Save Mart Supermarkets

ATC Number C-17-05

Date Construction Began (MM/DD/YR) 1978

Date Operation Began (MM/DD/YR) 1978

Company Contact Name JOHN DAVIS

Contact Phone Number 916-784-8853 **Email Address** JOHN.DAVIS@SAVEMART.COM

Print Name of Responsible Official HOWARD W FAULKNER

Signature of Responsible Official Howard W Faulkner 3-23-17

*Signature Required** *Date*

Instructions:

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Company Name Save Mart Supermarkets

ATC Number C-17-06

Date Construction Began (MM/DD/YR) 1977

Date Operation Began (MM/DD/YR) 1977

Company Contact Name JOHN DAVIS

Contact Phone Number 916-784-8853 **Email Address** JOHN.DAVIS@SAVEMART.COM

Print Name of Responsible Official HOWARD W FAULKNER

Signature of Responsible Official _____ 3-23-17
*Signature Required** *Date*

Instructions:

Date Construction Began is the date process equipment began being installed. For ATCs which approve modifications of conditions (i.e. no physical construction was required), leave this field blank.

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1947 Galileo Court, Suite 103; Davis, CA 95618
(530) 757-3659; Fax (530) 757-3670

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Company Name Save Mart Supermarkets

ATC Number C-17-07

Date Construction Began (MM/DD/YR) 1977

Date Operation Began (MM/DD/YR) 1977

Company Contact Name JOHN DAVIS

Contact Phone Number 916-784-8853 **Email Address** JOHNDAVISC@SAVEMART.COM

Print Name of Responsible Official HOWARD W. FAULKNER

Signature of Responsible Official Howard W. Faulkner 3-23-17

*Signature Required** *Date*

Instructions:

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FOR DISTRICT USE ONLY

Date Stamp Received _____ PTO Number _____

To all Employee's Vacaville Distribution Center #8795

Subject: Asbestos Survey February 15, 1991
Updated: Feb. 2016

California law, known as assembly bill 3713, requires any "owner" of a commercial building constructed before 1979 who knows the building contains asbestos-containing materials (ACM's) to provide a notice to all associates regarding the presence of such materials. ACM is one-tenth of one percent (0.1%) asbestos by weight. The mere presence of ACM within a building does not constitute a health hazard. Rather, it is the release of airborne asbestos fibers that occurs when ACM is disturb by removal, cutting or drilling that can cause problems.

This facility was inspected by IT Corporation as part of a company –wide program to determine whether there is any ACM's present. The following locations were identified to have ACM's.

Area	Type of ACM
Computer Room by entry door	1'x1' floor tile tan w/streaks C
Hallway outside battery Room	1'x1' Floor tile off wht/tan spks C
Roof of guardhouse by hatch	Grey sealant C

ASSOCIATES

A7D0683

Bacti

Savemart Vacaville

Certificate of Analysis

Sample ID: A7D0683-02
Sampled By: Tom Galindo
Sample Description: Distribution Site Sink // 4810019

Sample Date - Time: 04/06/17 - 09:56
Matrix: Drinking Water
Sample Type: Routine

Field Data: Res. Cl =1.0 mg/L

BSK Associates Laboratory Fresno

Microbiology

Analyte	Method	Result	RL	Units	Batch	Prepared	Qual
Coliform, Total and E.Coli by 1x10 MPN (Colilert)							
E. Coli	SM 9223B	<1.1	1.1	MPN/100 mL	A704288	04/06/17 18:31	
Total Coliform	SM 9223B	<1.1	1.1	MPN/100 mL	A704288	04/06/17 18:31	

ASSOCIATES

A7D0683

Bacti

Savemart Vacaville

Certificate of Analysis

Sample ID: A7D0683-01
Sampled By: Tom Galindo
Sample Description: Well 1 // 4810019-001

Sample Date - Time: 04/06/17 - 09:40
Matrix: Drinking Water
Sample Type: Other

Field Data: Res. Cl =0.0 mg/L

BSK Associates Laboratory Fresno

Microbiology

Analyte	Method	Result	RL	Units	Batch	Prepared	Qual
Coliform, Total and E.Coli by 1x10 MPN (Colilert)							
E. Coli	SM 9223B	<1.1	1.1	MPN/100 mL	A704288	04/06/17 18:31	
Total Coliform	SM 9223B	1.1	1.1	MPN/100 mL	A704288	04/06/17 18:31	MC Notify

MONTHLY SUMMARY OF REVISED TOTAL COLIFORM RULE DISTRIBUTION SYSTEM MONITORING
(including triggered source monitoring for systems subject to the Groundwater Rule)

System Name	System Number
Savemart	4810019
Sampling Period Month March	Year 2017

	Number Required	Number Collected	Number Total Coliform Positives	Number E.coli
1. Routine Samples (see note 1)	1	1	0	0
2. Repeat Samples following samples that are Total Coliform Positive and *E.coli* **Negative** (see notes 10 and 11)		0	0	0
3. Repeat Samples following Routine Samples that are **Total Coliform Positive** and ***E. coli* Positive** (see notes 10 and 11)		0	0	0
4. Treatment Technique (TT)/MCL Violation Computation for Total Coliform/*E. coli* Positive Samples a. Totals (sum of columns)	1	1	0	0
b. If 40 or more samples collected in month, determine percent of samples that are total coliform positive [(total number positive/total number collected) x 100] =	100 %			

c. Did the system trigger… a **Level 2** Assessment TT? (see notes 2, 3, 4, 5 and 6 for trigger info) ☐ Yes ☒ No

If a Level 2 Assessment is triggered, see note 8 below.

a **Level 1** Assessment TT? (see note 7 for trigger info) ☐ Yes ☒ No

If a Level 1 Assessment is triggered, see note 9 below.

5. Triggered Source Samples per Groundwater Rule (see notes 12 and 13)		1	0	0

6. Invalidated Samples

(Note what samples, if any, were invalidated; who authorized the invalidation; and when replacement samples were collected. Attach additional sheets, if necessary.)

7. Summary Completed By:

Signature	Title	Date
	Water Quality Analyst	4/10/17

NOTES AND INSTRUCTIONS:

1. Routine samples include:
   a. Samples required pursuant to 22 CCR Section 64423 and any additional samples required by an approved routine sample siting plan established pursuant to 22 CCR Section 64422.
   b. Extra samples are required for systems collecting less than five routine samples per month that had one or more total coliform positives in previous month;
   c. Extra samples for systems with high source water turbidities that are using surface water or groundwater under direct influence of surface water and do not practice filtration in compliance with regulations;
2. Note: For a repeat sample following a total coliform positive sample, any *E.coli* positive repeat (boxed entry) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
3. Note: For repeat sample following a *E.coli* positive sample, any total coliform positive repeat (boxed entry) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
4. Note: Failure to take all required repeat samples following an *E. coli* positive routine sample (22, CCR, Section 64426.1) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
5. Note: Failure to test for *E. coli* when any repoeat sample tests postive for total coliform (22, CCR, Section 64426.1) **constitutes an MCL violation and requires immediate notification to the Division** (22, CCR, Section 64426.1).
6. Note: Second Level 1 treatment technique trigger in a rolling 12-month period.
7. Total coliform Treatment Technique (TT) Violation **(Notify Department within 24 hours of TT violation):**
   a. For systems collecting less than 40 samples, if two or more samples are total coliform positive, then the TT is violated and a Level 1 Assessment is required.
   b. For systems collecting 40 or more samples, if more than 5.0 percent of samples collected are total coliform positive, then the TT is violated and a Level 1 Assessment is required.
8. Contact the Division as soon as practical to arrange for the division to conduct a Level 2 Assessment of the water system. The water system shall complete a Level 2 Assessment and sumbit it to the Division within 30 days of learning of the trigger exceedance.
9. Conduct a Level 1 Assessment in accordance with as soon as practical that covers the minimum elements (22, CCR, Section 64426.8 (a), (2). Submit the report to the Division within 30 days of learing of the trigger exceedance.
10. Positive results and their associated repeat samples are to be tracked on the Coliform Monitoring Worksheet.

GeoAnalytical Laboratories, Inc.

2300 Maryann Dr. Turlock, CA 95380 Phone (209) 669-0100 Fax (209) 593-2212
email: lab.geo@att.net

Report # D7C0910 **Project:** Savemart Vacaville 4810019 **Date:** 03/22/17

Westside Water
45 West G
Los Banos, CA 93635

Date Rec'd: 03/09/17

CERTIFICATE OF ANALYSIS

Sampler: Dan T.

Sample ID: Source Well #1 Special 4810019-001

Lab ID	Sample Date / Time	RL	Method	Analyte	Result	Units	Notes	Started
D7C0910-01	3/08/2017 15:30	1.0	SM9223 (Colilert)	E. Coli	<1	MPN/100mL		3/ 9/17 13:20
		1.0		Total Coliform	<1	MPN/100mL		

Sample ID: Routine Site Sink

Lab ID	Sample Date / Time	RL	Method	Analyte	Result	Units	Notes	Started
D7C0910-02	3/08/2017 15:45	1.0	SM9223 (Colilert)	E. Coli	<1	MPN/100mL		3/ 9/17 13:20
		1.0		Total Coliform	<1	MPN/100mL		

Fatima Ambrocio
Chemist

Donna Keller
Laboratory Director

Certification # 2585

GeoAnalytical Laboratories, Inc.

2300 Maryann Dr. Turlock, CA 95380 Phone (209) 669-0100 Fax (209) 593-2212
email: lab.geo@att.net

Report # D7C0910 **Project: Savemart Vacaville 4810019** **Date:** 03/22/17

Date Rec'd: 03/09/17

Westside Water
45 West G
Los Banos, CA 93635

Microbiology - Quality Control
GeoAnalytical Laboratories, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch D000735 - BIO				**Prepared: 03/09/17 Analyzed: 03/10/17**						
Blank (D000735-BLK1)										
E. Coli	<1	1.0	MPN/100mL							
Total Coliform	<1	1.0	"							
Duplicate (D000735-DUP1)		**Source: D7C0913-01**								
E. Coli	<1	1.0	MPN/100mL		0.0				20	
Total Coliform	1.0	1.0	"		1.0			0	20	

GeoAnalytical Laboratories, Inc.

2300 Maryann Dr. Turlock, CA 95380 Phone (209) 669-0100 Fax (209) 593-2212
email: lab.geo@att.net

Report # D7C0910 **Project: Savemart Vacaville 4810019** **Date:** 03/22/17

Date Rec'd: 03/09/17

Westside Water
45 West G
Los Banos, CA 93635

Notes and Definitions

<1	<1
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
RL	Reporting Limit
NA	Not Applicable

GeoAnalytical Laboratories, Inc.

2300 Maryann Dr. Turloc[illegible]
[illegible]H (209) 669-01

Lab Report # [illegible]
Regulatory ☐Yes ☐No CC: ☐Yes ☐No
Regulator:
Phone: (209) 826-5009
Fax: (209) 826-5332
Original To:
C.C To:

Client: Westside Water Conditioning
Address: 45 West G St
City Los Banos Zip 93635

CHAIN OF CUSTODY
☐EDF ☐EDT
☐ FIELD LOGS

Project ID Savemart Vacaville 4810019

Sampled By (Print Name) Dan Teltow
(Signature)

Date	Time	Sample type Grab	Sample type Comp	Matrix	Sample ID	Container Type	Container Size	No. Of Containers	Colilert mPm	Chlorine ppm								Lab Use Only Lab ID #	Preservative
3-8-17	3:30 pm	X		DW	Source Well #1-Special-4810019-001		100 ml	1	X	0.0								-01	
3-8-17	3:45 pm	X		DW	Routine Site ~~Wash Rack~~ Sink		100 ml	1	X	0.4								-02	

temp @ 4.2

Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time
[signature]	3/9/17	11:43	[signature]	3/9/17	11:43
Relinquished by (Signature)	Date	Time	Received by (Signature)	Date	Time

Preservative: 1 4°C 2 HCL 3 -NaOH 4 $Na_2S_2O_3$ 5 -HNO_3 6 -H_2SO_4 7 -Other _____ DW Drinking Water WW Waste Water HWW Hazardous Waste (Water) S Soil/Solid

Matrix

Bailers _____ 55 Gallon Drums _____ Pump Truck ☐ Time Mileage

Turnaround Time ☐Standard ☐Silver Rush ☐Gold Rush ☐Platinum Rush ☐Other

Approved By:

SAVE MART SUPERMARKETS

Northern California Region
700 CROCKER DRIVE VACAVILLE, CALIFORNIA 95688 °
(209-) 574-6299 XT-5925

May 1st, 2017

City of Vacaville
Attn: Pretreatment Program
P. O. Box 220
Elmira, CA 95625-0220

Re; Save-Mart Distribution Center
700 Crocker Drive
Vacaville, CA 95688

Ladies and Gentlemen:

This letter transmits the self-monitoring report for industrial wastewater discharged from the above referenced facility for the April, 2017 reporting period. All permit requirements **were not** achieved for the month of April, 2017.

Enclosed is a summary table of the test results, along with copies of laboratory reports with chain of custody records for sampling performed during this reporting period.

The enclosed Sewer Management Report contains additional details. If you require any further information, please feel free to contact me at (209-574-6299 xt-5925).

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

Sincerely,

Howard Faulkner
Facility Maintenance Manager

c:

SAVE MART SUPERMARKETS

WASTE WATER MANAGEMENT REPORT
April, 2017

There was one (1) 24-hour weekly flow composite sample taken for the month of March. This sample concluded and was collected on April 6, 2017 (Reference enclosed laboratory reports and data sheet).

The permit requirements were not achieved due to the loss of continuous monitoring on 4/2, 4/9, and 4/10 the usage for those days was determined by averaging the flows from the day before and the day after.

Save Mart Super Markerts POC 001-SMR

April-2017

Date	Daily Flow		BOD		TSS		TDS		EC		T O&G	Daily Min pH	Daily Max pH	pH Excursn Time(1)
730-3-001	POC-001 10,000	<MDL	POC-001 770	<MDL	POC-001 546	<MDL	POC-001 NDL	<MDL	POC-001 NDL	<MDL	POC-001 NDL	POC-001 Daily Min ≥ 5.5	POC-001 Daily Max ≤10.5	No Excursion ≥ 60 mins for Min-pH Btwn 5.5 & 5.0 or Max-pH Btwn 10.5 & 11.0
m/d/y	gpd		mg/l		mg/l		mg/l		umhos/cm		mg/l	S.U.	S.U.	(minutes)
4/1/2017	2,144											6.6	7.2	
4/2/2017	2,089											7.2	7.2	
4/3/2017	2,033											6.6	7.0	
4/4/2017	2,082											6.8	7.2	
4/5/2017	2,186											6.8	7.2	
4/6/2017	2,206		38		37				690			6.6	6.8	
4/7/2017	3,464											6.6	7.2	
4/8/2017	4,930											6.8	6.8	
4/9/2017	3,357											6.8	7.2	
4/10/2017	2,638											7.2	7.4	
4/11/2017	1,784											7.0	7.6	
4/12/2017	1,725											6.8	7.2	
4/13/2017	1,520											6.8	7.6	
4/14/2017	1,520											7.0	7.4	
4/15/2017	1,520											6.8	7.3	
4/16/2017	1,026											6.6	6.9	
4/17/2017	2,423											6.8	7.6	
4/18/2017	1,431											6.8	7.6	
4/19/2017	2,019											6.8	7.4	
4/20/2017	1,957											6.8	7.4	
4/21/2017	1,841											6.6	7.2	
4/22/2017	1,694											6.8	7.2	
4/23/2017	2,770											6.6	7.3	
4/24/2017	1,918											6.5	7.0	
4/25/2017	1,620											6.6	7.0	
4/26/2017	1,715											6.5	6.6	
4/27/2017	1,656											6.5	6.5	
4/28/2017	1,795											6.5	6.5	
4/29/2017	2,629											6.4	6.8	
4/30/2017	2,366											6.1	6.5	
5/1/2017														
Average	2,135		38		37				690			Monthly Min pH	Monthly Max pH	Monthly Total Mins
Mo. Avg Limit	≤ 5,000 gpd		385		273		NML		NML		NML			
Total	64,058											6.1	7.6	0.0

Footnotes/Abbreviations

NDL = No Daily Limit
NML = No Monthly Limit
<MDL = Less than method

gpd = gallons per day mgd=millions of gallo GPM = gallons per minute
mg/L = milligrams per ug/L = micrograms pe umhos/cm = micromhos per centimeter
lbs/day = pounds per day S.U.=standard units

(1) Time of pH excursion from the 5.5-10.5 range must not exceed 60 minutes per indivdual occurance and 7 hours and 26 minutes in any calendar month

Thursday, April 20, 2017

Howard Faulkner
Save-Mart Distribution Center #802
700 Crocker Dr.
Vacaville, CA 95688

Re Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

Collected By: HOWARD FAULKNER
PO/Contract #:

Dear Howard Faulkner:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, April 07, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Enclosures

Project Manager: Eli N. Greenwald

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1885 North Kelly Road • Napa, California 94558
(707) 258-4000 • Fax (707) 226-1001 • e-mail: info@caltestlabs.com

SAMPLE SUMMARY

Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

Lab ID	Sample ID	Matrix	Date Collected	Date Received
S040365001	POC 001	Water	04/06/2017 08:00	04/07/2017 09:10

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NARRATIVE

Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

General Qualifiers and Notes

Caltest authorizes this report to be reproduced only in its entirety. Results are specific to the sample(s) as submitted and only to the parameter(s) reported.

Caltest certifies that all test results for wastewater and hazardous waste analyses meet all applicable NELAC requirements; all microbiology and drinking water testing meet applicable ELAP requirements, unless stated otherwise.

All analyses performed by EPA Methods or Standard Methods (SM) 20th Edition except where noted (SMOL=online edition).

Caltest collects samples in compliance with 40 CFR, EPA Methods, Cal. Title 22, and Standard Methods.

Dilution Factors (DF) reported greater than '1' have been used to adjust the result, Reporting Limit (RL), and Method Detection Limit (MDL).

All Solid, sludge, and/or biosolids data is reported in Wet Weight, unless otherwise specified.

Filtrations performed at Caltest for dissolved metals (excluding mercury) and/or pH analysis are not performed within the 15 minute holding time as specified by 40CFR 136.3 table II.

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

ND - Non Detect - indicates analytical result has not been detected.

RL - Reporting Limit is the quantitation limit at which the laboratory is able to detect an analyte. An analyte not detected at or above the RL is reported as ND unless otherwise noted or qualified. For analyses pertaining to the State Implementation Plan of the California Toxics Rule, the Caltest Reporting Limit (RL) is equivalent to the Minimum Level (ML). A standard is always run at or below the ML. Where Reporting Limits are elevated due to dilution, the ML calibration criteria has been met.

J - reflects estimated analytical result value detected below the Reporting Limit (RL) and above the Method Detection Limit (MDL). The 'J' flag is equivalent to the DNQ Estimated Concentration flag.

E - indicates an estimated analytical result value.

B - indicates the analyte has been detected in the blank associated with the sample.

NC - means not able to be calculated for RPD or Spike Recoveries.

SS - compound is a Surrogate Spike used per laboratory quality assurance manual.

NOTE: This document represents a complete Analytical Report for the samples referenced herein and should be retained as a permanent record thereof.

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ANALYTICAL RESULTS

Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

Lab ID **S040365001** Date Collected 4/6/2017 08:00 Matrix Water
Sample ID **POC 001** Date Received 4/7/2017 09:10

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Total Suspended Solids Analysis	**Analytical Method:**		SM 2540 D-97				**Analyzed by:**	KKR	
Total Suspended Solids	37	mg/L	3	1			04/09/17 11:52	BIO 17786	
Biochemical Oxygen Demand/5-Day	**Prep Method:**		SM 5210 B-01		**Prep by:**	DR			
	Analytical Method:		SM 5210 B-01				**Analyzed by:**	KKR	
Biochemical Oxygen Demand	38	mg/L	5	1	04/07/17 13:06	BOD 10256	04/12/17 13:34	BOD 10258	
Electrical Conductance Analysis	**Analytical Method:**		SM 2510 B-97				**Analyzed by:**	CLM	
Conductivity	690	umhos/cm	10	1			04/18/17 09:49	WET 8995	

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QUALITY CONTROL DATA

Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

Analysis Description:	Total Suspended Solids Analysis	**QC Batch:**	BIO/17786
Analysis Method:	SM 2540 D-97	**QC Batch Method:**	SM 2540 D-97

METHOD BLANK: 752170

Parameter	Blank Result	Reporting Limit	Units	Qualifiers
Total Suspended Solids	ND	3	mg/L	

LABORATORY CONTROL SAMPLE: 752171

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% REC Limits	Qualifier
Total Suspended Solids	mg/L	500	486	97	80-120	

SAMPLE DUPLICATE: 752172

Parameter	Units	S040329001 Result	DUP Result	RPD	Max RPD	Reporting Limit	MDL	Qualifiers
Total Suspended Solids	mg/L	128	124	3.2	20	12	8	

SAMPLE DUPLICATE: 752314

Parameter	Units	S040001008 Result	DUP Result	RPD	Max RPD	Reporting Limit	MDL	Qualifiers
Total Suspended Solids	mg/L	980	1000	2	20	30	20	

Analysis Description:	Biochemical Oxygen Demand/5-Day	**QC Batch:**	BOD/10256
Analysis Method:	SM 5210 B-01	**QC Batch Method:**	SM 5210 B-01

METHOD BLANK: 751979

Parameter	Blank Result	Reporting Limit	Units	Qualifiers
Biochemical Oxygen Demand	ND	5	mg/L	

LABORATORY CONTROL SAMPLE: 751980

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% REC Limits	Qualifier
Biochemical Oxygen Demand	mg/L	198	190	96	85-115	

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QUALITY CONTROL DATA

Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

Analysis Description:	Biochemical Oxygen Demand/5-Day	**QC Batch:**	BOD/10256
Analysis Method:	SM 5210 B-01	**QC Batch Method:**	SM 5210 B-01

SAMPLE DUPLICATE: 751981

Parameter	Units	S040001006 Result	DUP Result	RPD	Max RPD	Reporting Limit	MDL	Qualifiers
Biochemical Oxygen Demand	mg/L	2540	2430	4.4	30	50	50	

Analysis Description:	Electrical Conductance Analysis	**QC Batch:**	WET/8995
Analysis Method:	SM 2510 B-97	**QC Batch Method:**	SM 2510 B-97

METHOD BLANK: 753518

Parameter	Blank Result	Reporting Limit	Units	Qualifiers
Conductivity	ND	10	umhos/c	

LABORATORY CONTROL SAMPLE: 753519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% REC Limits	Qualifier
Conductivity	umhos/c	1400	1410	100	80-120	

SAMPLE DUPLICATE: 753520

Parameter	Units	S040363001 Result	DUP Result	RPD	Max RPD	Reporting Limit	MDL	Qualifiers
Conductivity	umhos/c	350	350	1.1	20	10	10	

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QUALITY CONTROL DATA QUALIFIERS

Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

QUALITY CONTROL PARAMETER QUALIFIERS

Results Qualifiers: Report fields may contain codes and non-numeric data correlating to one or more of the following definitions:

NS - means not spiked and will not have recoveries reported for Analyte Spike Amounts

QC Codes Keys: These descriptors are used to help identify the specific QC samples and clarify the report.

MB - Method Blank

Method Blanks are reported to the same Method Detection Limits (MDLs) or Reporting Limits (RLs) as the analytical samples in the corresponding QC batch.

LCS/LCSD - Laboratory Control Spike / Laboratory Control Spike Duplicate

DUP - Duplicate of Original Sample Matrix

MS/MSD - Matrix Spike / Matrix Spike Duplicate

RPD - Relative Percent Difference

%Recovery - Spike Recovery stated as a percentage

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Lab Order: S040365
Project ID: MONTHLY SAMPLING:24hr COMP

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
S040365001	POC 001	SM 2540 D-97	BIO/17786		
S040365001	POC 001	SM 5210 B-01	BOD/10256	SM 5210 B-01	BOD/10258
S040365001	POC 001	SM 2510 B-97	WET/8995		

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SAMPLE CHAIN OF CUSTODY

PAGE 1 OF 1

LAB ORDER #: S040365

PROJECT # / PROJECT NAME: MONTHLY 24-HOUR COMPOSITE

P.O. #:

CLIENT: SAVE MART D.C. #802

REPORT ATTN:

ADDRESS: 700 CROCKER DR. CITY: VACAVILLE STATE: CA ZIP: 95688

BILLING ADDRESS: SAME.

PHONE #: 209-574-6299

FAX PHONE:

SAMPLER (PRINT & SIGN NAME): HOWARD W FAULKNER / Howard W Faulkner

ANALYSES REQUESTED

TURN-AROUND TIME: ☐ STANDARD ☐ RUSH

DUE DATE:

CALTEST #	DATE SAMPLED	TIME SAMPLED	MATRIX	CONTAINER AMOUNT/TYPE	PRESERVATIVE	SAMPLE IDENTIFICATION SITE	CLIENT LAB #	COMP. or GRAB	BOD-405.1 TSS-160.2	E/C 120.1					REMARKS
(*)	4/5/17	8:00A		POLY 1000	NONE	POC 001 #1		COMP	X						
	4/5/17	8:00A		POLY PINT	NONE	POC 001 #2		COMP.		X					

(*) Rec'd at lab past Hold time for BOD

CY 4/7/17

By submittal of sample(s), client agrees to abide by the Terms and Conditions set forth on the reverse of this document.

RELINQUISHED BY	DATE/TIME	RECEIVED BY	RELINQUISHED BY	DATE/TIME	RECEIVED BY
Howard W Faulkner	4-7-17 0830	K. Gubbs	K Gubbs	4/7/17 0910	C Gaeta

Samples: WC ____ MICRO ____ BIO ✓ MET ____ SV ____ VOA ____ TEMP: 1.6 °C SEALED: (Y) / N ____ INTACT (Y) / N ____

BD: BIO ____ WC ____ MET ____

CC: AA ____ SV ____ VOA ____

SIL: HP ____ PT ____ QT ____ VOA ____

W/HNO$_3$ ____ H$_2$SO$_4$ ____ NaOH ____

PIL: HNO$_3$ ____ H$_2$SO$_4$ ____ NaOH ____ HCL ____

COMMENTS

MATRIX: W = Aqueous Nondrinking Water, Digested Metals; ML = Low R.L.s, Aqueous Nondrinking Water, Digested Metals; DW = Drinking Water; SL = Soil, Sludge, Solid; FP = Free Product

CONTAINER TYPES: AL = Amber Liter; AHL = 500 ml Amber; PT = Pint (Plastic); QT=Quart (Plastic); HG = Half Gallon (Plastic); SJ = Soil Jar; B4 = 4 oz. BACT; BT = Brass Tube; VOA = 40 mL VOA; OTC = Other Type Container

FOR LAB USE ONLY

REV. 2/13

WHITE - ORIGINAL TO LABORATORY YELLOW - CLIENT COPY AS RECEIPT

ANALYTICAL RESULTS

Lab Order: Q030252
Project ID: 2015 DW COMPLIANCE

Lab ID Q030252001 | Date Collected 3/5/2015 07:41 | Matrix Drinking Water
Sample ID WELL|4810019-001 | Date Received 3/5/2015 14:59

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Mercury Analysis by FIMS	**Prep Method:**		EPA 245.1		**Prep by:**	UK			
	Analytical Method:		EPA 245.1				**Analyzed by:**	DR	
Mercury	ND	mg/L	0.0010	1	03/11/15 00:00	MPR 13454	03/12/15 12:11	MHG 4919	
Metals Analysis by ICPMS	**Prep Method:**		EPA 200.8		**Prep by:**	UK			
	Analytical Method:		EPA 200.8				**Analyzed by:**	LM	
Aluminum	ND	ug/L	50	1	03/13/15 00:00	MPR 13462	03/17/15 12:32	MMS 7544	
Antimony	ND	ug/L	6.0	1	03/13/15 00:00	MPR 13462	03/17/15 12:32	MMS 7544	
Arsenic	2.0	ug/L	2.0	1	03/13/15 00:00	MPR 13462	03/17/15 12:32	MMS 7544	
Barium	130	ug/L	100	1	03/13/15 00:00	MPR 13462	03/17/15 12:32	MMS 7544	
Beryllium	ND	ug/L	0.10	1	03/13/15 00:00	MPR 13462	03/17/15 12:32	MMS 7544	
Cadmium	ND	ug/L	0.10	1	03/13/15 00:00	MPR 13462	03/17/15 12:32	MMS 7544	
Chromium	6.5	ug/L	5.0	1	03/13/15 00:00	MPR 13462	03/17/15 12:32	MMS 7544	
Nitrogen, Nitrite Analysis	**Analytical Method:**		SM20-4500-NO2 B				**Analyzed by:**	JS	
Nitrogen, Nitrite (as N)	ND	mg/L	0.4	1			03/06/15 08:51	WCO 10624	
Anions by Ion Chromatography	**Analytical Method:**		EPA 300.0				**Analyzed by:**	MYS	
Nitrate, as NO3	5.8	mg/L	0.5	1			03/05/15 22:50	WIC 4925	

Lab ID Q030252002 | Date Collected 3/5/2015 08:14 | Matrix Drinking Water
Sample ID PALLET DOCK|4810019-001 | Date Received 3/5/2015 14:59

Parameters	Result	Units	R. L.	DF	Prepared	Batch	Analyzed	Batch	Qual
Haloacetic Acids Analysis	**Analytical Method:**		EPA 552.2			**Haloacetic Acids Analysis**			

Analysis performed by Eurofins Eaton Analytical, CA-ELAP Certification 2813. Refer to attached for original certificate of analysis.

Volatile Organic (THMs) Analysis	**Analytical Method:**		EPA 524.2				**Analyzed by:**	AN	
Bromodichloromethane	ND	ug/L	1	1			03/06/15 15:14	VMS 3211	1
Bromoform	ND	ug/L	1	1			03/06/15 15:14	VMS 3211	
Chloroform	ND	ug/L	1	1			03/06/15 15:14	VMS 3211	
Dibromochloromethane	ND	ug/L	1	1			03/06/15 15:14	VMS 3211	
4-Bromofluorobenzene (SS)	104	%	85-115	1			03/06/15 15:14	VMS 3211	
1,2-Dichlorobenzene-d4 (SS)	92	%	80-120	1			03/06/15 15:14	VMS 3211	
Total Trihalomethanes	ND	ug/L	1	1			03/06/15 15:14	VMS 3211	

nelac

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BON
NFAR

Department of
Environmental Management
601 TEXAS STREET
FAIRFIELD, CALIFORNIA 94533-6301

Environmental Health Division
(707) 421-6765

Clifford K. Covey, REHS, CHMM
Program Manager

June 17, 1998

MR. JAMES MANION
AMERICAN STORES PROPERTIES, INC.
P.O. BOX 26948
SALT LAKE CITY, UT 84126

RE: TRANSMITTAL OF UNDERGROUND STORAGE TANK (UST) CASE CLOSURE CERTIFICATION AND CASE CLOSURE SUMMARY, Unauthorized Release, Lucky Distribution Center, 700 Crocker Drive, Vacaville, CA. SCDEM File No. **50027**, Regional Board LUSTIS No. **48-0140**.

Dear Mr. Manion:

Enclosed, please find one copy each of the Remedial Action Completion Certification and Case Closure Summary for your files. Thank you for your cooperation throughout this investigation.

Please contact me at (707) 421-6765 if you have any questions regarding this matter.

Sincerely,

Robert S. Fagerness

Robert S. Fagerness, P.E.
Environmental Engineer

Enclosures: Remedial Action Completion Certification
Case Closure Summary

cc: Mr. Brett Wyckoff, Central Valley RWQCB (With Enclosures)
Ms. Lori Casias, State Water Resources Control Board (With Enclosures)
Mr. Dave Deaner, Fund Manager, UST Cleanup Fund Program (With Enclosures)
Margaret Z. Dahlen, Treadwell and Rollo (With Enclosures)

98 JUN 19 PM 1:27
RECEIVED
SACRAMENTO
CVRWQCB

C:\RSF\LOP\50027\TRANS.LTR (June 17, 1998)

Department of
Environmental Management
601 TEXAS STREET
FAIRFIELD, CALIFORNIA 94533-6301

Environmental Health Division
(707) 421-6765

Clifford K. Covey, REHS, CHMM
Program Manager

REMEDIAL ACTION COMPLETION CERTIFICATION

June 17, 1998

MR. JAMES MANION
AMERICAN STORES PROPERTIES, INC.
P.O. BOX 26948
SALT LAKE CITY, UT 84126

RE: **UNDERGROUND STORAGE TANK (UST) CASE CLOSURE**, Unauthorized Release, Lucky Distribution Center, 700 Crocker Drive, Vacaville, CA. SCDEM File No. **50027**, Regional Board LUSTIS No. **48-0140**.

Dear Mr. Manion:

This letter confirms the completion of site investigation and remedial action for the underground storage tank(s) formerly located at the above-described location. Thank you for your cooperation throughout this investigation. Your willingness and promptness in responding to our inquiries concerning the former underground storage tank(s) are greatly appreciated.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank release is required.

This notice is issued pursuant to a regulation contained in Section 2721 (e) of Title 23 of the California Code of Regulations.

Please contact the project lead, Mr. Robert Fagerness, or me at (707) 421-6765 if you have any questions regarding this matter.

Sincerely,

Clifford K. Covey, REHS, CHMM
Program Manager, Environmental Health

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

I. AGENCY INFORMATION

Date: 4/8/98

Agency Name: Solano County Department of Environmental Management (SCDEM)
Address: 601 Texas St.
City/State/Zip: Fairfield, CA 94533 — Phone: (707) 421-6765
Project Lead: Robert S. Fagerness — Title: Environmental Engineer
Engineering Review: Robert S. Fagerness, P.E. RSF — Title: Environamental Engineer

II. CASE INFORMATION

Site Name: Lucky Distribution Center
Site Address: 700 Crocker Drive, Vacaville, California.
RB Lustis case no: **48-0140** Local case no: **50027** LOP case no: **50027**
URF filing date: 11/19/91 SWEEPS no: **50027**

Responsible Party Information

Responsible Party	Address	Phone Number
Mr. James Manion American Store Properties, Inc.	P.O. Box 26948 Salt Lake City, UT 84126	

Tank Information

TANK AREA 1

Tank No.	Size (gal.)	Contents	Closed?	Closure Method	Date
1-4	12,000	Diesel	Yes	Excavate and Remove	09/08/89

TANK AREA 2

Tank No.	Size (gal.)	Contents	Closed?	Closure Method	Date
1	12,000	Diesel	Yes	Excavate and Remove	02/16/89
2-4	12,000	Diesel	Yes	Excavate and Remove	10/29/90
5-6	12,000	Diesel	Active	Installed	05/28/91

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and type of release: **Hole in Tank, Leaky Piping**
Is site characterization complete? **YES** — Date approved by oversight agency: **4/8/98**
How many monitoring wells installed? **7** — Proper screened interval? **YES**
Highest gw depth below grade: **23 feet bgs** — Lowest depth: **34 feet bgs**
Groundwater flow direction: **Predominantly to southwest**
Most sensitive current use: **Commercial**
Are drinking wells affected? **NO** — Drinking water aquifer name: **Unknown**
Is surface water affected? **NO** — Nearest/affected sw body name: **NONE**
Address/location of off-site impact: **NONE**
Are report(s) on file? **YES** — Where? **SCDEM**

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Continued)

Treatment and Disposal of Affected Materials

Material	Amount	Action (treatment/disposal w/ destination)	Date
Tank	1 (Area 2)	Removed and disposed to H&H (SF)	02/16/89
Tanks	4 (Area 1)	Removed and to H&H (SF)	09/08/89
Tanks	3 (Area 2)	Removed and disposed Erickson (Richmond)	10/29/90
Piping	<10 feet	Removed and disposed to H&H (SF)	02/16/90
Piping	<50 feet	Removed and disposed to H&H (SF)	09/08/89
Piping	30 feet	Removed by Erickson disposed off-site	10/29/90
Free product	10.9-Gal	Removed from 1991-June 1995	06/1995
Soil (Area 2)	15 CY	Disposed off-site Buttonwillow, CA	07/06/89
Soil (Area 1)	1100 CY	Treated on-site backfilled into excavation	11/1990
Soil (Area 2)	2000 CY	Treated on-site, used to fill low areas	10/12/93
groundwater	None	Purged groundwater disposed off-site	
barrels/drums	None		

Maximum Documented Contaminant Concentrations - before and after cleanup

	Soil (ppm)		Water (ppm)			Soil (ppm)		Water (ppm)	
Contaminant	before	after	before	after	Contaminant	before	after	before	after
TPH (gas)	NA	NA	NA	NA	benzene	<0.005	<0.0025	FP	<0.0005
TPH (diesel)	3800	3800	FP	0.42	toluene	<0.005	<0.0025	FP	<0.0005
oil & grease	NA	NA	NA	NA	ethylbenzene	<0.005	<0.0025	FP	<0.0005
lead	NA	NA	NA	NA	xylenes	<0.005	0.60	FP	<0.002
other					MTBE	NA	NA	NA	<0.005

COMMENTS (DEPTH OF REMEDIATION, ETC.):

TANK AREA 1 (Located on southwestern portion of site)
This area of the site originally contained four 12,000-gallon fiberglass USTs which had been installed in 1978. The USTs were removed from the site on September 8, 1989 and was witnessed by Mike Rees of this department. No holes were noted in any of the USTs. No obvious soil contamination was noted at the time of the removal. Soil samples were collected within native soil from beneath each end of the USTs at depths of approximately 14 feet bgs. No groundwater was encountered during the UST removal procedures. The samples were only analyzed for TPH-d and determined to be less than analytical reporting limits (10 ppm).

Approximately 1,100 cubic yards of UST backfilled soil were generated as part of the UST removal activities. Two discrete soil samples were collected from the stockpiled soil on the day of the UST removal. Analytical results of the stockpiled soil sampling indicated TPH-d concentrations of 32 ppm and 750 ppm. The stockpiled soil was again characterized on August 30, 1990 (16 four-part composite

samples). No BTEX compounds were detected (analytical limits 50 ppb) in any of the samples analyzed. TPH-d was detected in 4 of the 16 samples ranging from 28 ppm to 82 ppm. Destination of the stockpiled soil is unknown; however, the open excavations in Tank Area 1 was backfilled and paved over 1990-1991.

Based on Alec Nagle's (this department) notes (09/10/93) SCDEM considers this portion of the site to be a low risk soils only case and no further action was required.

TANK AREA 2 (Located on the mid-eastern portion of the site)
On February 16, 1989 one 12,000-gallon single wall steel UST was removed from Tank Area 2. The removal was witnessed by David Huff of this department. Visual hydrocarbon staining of the soil was noted on the south end of the excavation. Approximately 30 cubic yards of sol was over excavated. Three confirmatory soil samples were collected from the UST excavation and no TPH-d or BTEX were detected above analytical reporting limits 10 ppm and 0.1 ppm, respectively. 15 cubic yards of soil was disposed off-site (Buttonwillow, CA) while the remainder was backfilled into excavation. Based on Alec Nagle's (this department) notes (09/10/93) SCDEM considered this portion of Tank Area 2 portion of the site to be a low risk soils only case and no further action was required.

On October 29, 1990 three 12,000-gallon (two single wall steel and one single wall fiberglass) USTs were removed from Tank Area 2. The removal was witnessed by Ken Williams of this department. Six soil samples were collected in native soil (one from each side of UST) at a depth of 16 feet bgs. No groundwater was encountered during the removal and sampling process. No BTEX were detected above analytical reporting limits (5 ppb) in any of the soil samples. However, TPH-d was detected in three of the six samples ranging from 320 to 960 ppm.

From October 29, 1990 to November 8, 1990 over excavation of the tank pit excavation was conducted deepening and widening the excavation based on visual and olfactory field screening and 24 hour analytical turn around. The over excavation activities were again witnessed by this department. In all, approximately 2000 cubic yards of soil was generated and 26 additional soil confirmation samples were collected. The excavation was as deep as 27 feet bgs... no groundwater was encountered. The analytical results indicated that residual TPH-d soil contamination remained (up to 1,100 ppm) at a depth of 23 feet bgs; however, a majority of the sidewall and floor soil samples were less than analytical reporting limits (10 ppm, TPH-d). The stockpiled soil was successfully bio-remediated on-site and was allowed to be used as on-site fill for low areas per this department's letters dated October 6 and 12, 1993.

From December 1990 to June 1992, four soil investigations were conducted. Residual TPH-d soil contamination was laterally characterized outside of the former tank pit excavation area. The residual contamination is most extensive from 25 to 30 feet bgs with diminishing concentrations which extent into the groundwater 35 and 40 feet bgs. (See attached TPH-d soil concentration iso-contours.) The highest residual contamination in the soil is listed above "after cleanup"

Three groundwater monitoring wells (MW-1 to MW-3) were installed surrounding the former UST tank excavation in December 1990. Four additional monitoring wells (MW-4 to MW-7) were placed outside of the three monitoring wells in June 1992. A consistent groundwater monitoring program was initiated

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

in December 1991 and continued through March 1997. Free product was encountered in two wells (MW-1 and MW-7) and is discussed below. Dissolved TPH-d concentrations have fluctuated in the samples collected from the monitoring wells but have generally shown and overall decrease.

Free product was encountered in monitoring wells MW-1 and MW-7 with maximum amounts reported at 3.5 feet and 0.42 feet of product, respectively. Manual product recovery was conducted from April 1991 through June 1995, removing an approximate total of 10.9 gallons product. No evidence of free-product was encountered from September 1995 through the last sampling event in March 1997.

In response to this department's and RWQCB requests for a deeper groundwater information, a deeper groundwater investigation was conducted by the consultant in November of 1997. Three separate locations were chosen for the investigation and approved by this department. Continuous coring was conducted to allow the on-site geologist to accurately pin-point discrete water bearing zones and sample from those zones. The investigation identified three water bearing zones located roughly 30-40, 50-55 and 60-76 feet bgs. TPH-d was detected above analytical reporting limits in 3 of the 9 water samples collected, ranging from 110 µg/L to 420 µg/L. No BTEX or MTBE compounds were detected above analytical laboratory reporting limits in any of the samples analyzed. Essentially, the investigation found that the lateral and vertical extent of the TPH-d contamination is limited and decreasing with depth.

IV. CLOSURE

Are existing beneficial uses protected per RB Basin Plan? **YES**
Are potential beneficial uses protected per RB Basin Plan? **YES**
Is public health protected for current land use? **YES**
Describe site management requirements: **NONE**
Should corrective action be reviewed if site use changes? **NO**
Are MWs decommissioned? ~~NO~~ YES How many? **7** Number remaining: 7 - DESTROYED 6/17/98 RSF
Describe enforcement actions taken: **NONE**
Describe enforcement actions rescinded: **NONE**

V. LOCAL AGENCY REPRESENTATIVE DATA

Name: Clifford K. Covey, REHS, CHMM Title: Program Manager, Environmental Health

Signature: Clifford K Covey Date: 4/9/98

VI. RWQCB NOTIFICATION

RWQCB Staff Name: James Brathovde Title: Associate Engineering Geologist
Date Submitted to RWQCB: April 8, 1998

Signature: James Brathovde Date: 1 MAY 98 RB Response: CONCUR

CASE CLOSURE SUMMARY
Leaking Underground Fuel Storage Tank Program

VII. ADDITIONAL COMMENTS (attach pages as necessary)

Based on the available information received by this department to date, the soil and groundwater conditions at the site have been adequately characterized. Residual TPH-d soil contamination is present at the site. However, the historical and recent groundwater characterizations indicate that lateral and vertical extent of TPH-d contamination attenuates with respect to distance from the residual soil contamination.

Based on the age of the release, the type of the contaminant present, the existing subsurface lithology and the minimal identified migration of the contaminant into groundwater (both lateral and vertical), this department recommends no further action and closure of this case. The residual soil and groundwater contamination do not pose a risk to future groundwater resources, other than those in the immediate vicinity of the former tank pit. Should the use of shallow groundwater within the immediate vicinity of the former tank pit be required at the site, the TPH-d contamination could be easily and economically treated at the well head.

CALIFORNIA REGIC . WATER QUALITY CONTROL BOARL
CENTRAL VALLEY REGION

3443 Routier Road, Suite A
Sacramento, CA 95827-3098
Phone (916) 255-3000
FAX (916) 255-3015

Cal/EPA

Pete Wilson, *Governor*

RECEIVED
Solano County
Environmental Management
AM MAY 05 1998 PM
7,8,9,10,11,12,1,2,3,4,5,6

4 May 1998

Mr. Clifford K. Covey
Solano County Department of Environmental Management
601 Texas Street
Fairfield, CA 94533-6301

NO FURTHER ACTION REQUIRED CONCURRENCE, UNDERGROUND STORAGE TANKS, SOLANO COUNTY

This letter confirms the completion of site investigation and remedial action for the following underground tank facilities in Solano County.

Facility	Street Address	City
Lucky Distribution Center	700 Crocker Drive	Vacaville
Caltrans, J. Mack Ferry	Highway 220 at East Ryer Island	Ryer Island
Solano Irrigation District	508 Elmira Road	Vacaville

Based upon the available information in our files and with the provision that the information provided to this agency is accurate and representative of site conditions, no further action related to the underground storage tank release is required for the above facilities.

If you have any questions, please call James Brathovde at (916) 255-3137.

J. LAWRENCE PEARSON
Supervising Engineer

Enclosures

cc: Mr. Jim Wehinger, Cleanup Fund, State Water Resources Control Board, Sacramento
Mr. Robert Fagerness, Solano County Department of Environmental Management, Fairfield

LUSTIS 48-0140

T[illegible] 1 - CHECKLIST OF REQUIRED [illegible]
FOR NO FURTHER ACTION REQUESTS AT UNDERGROUND TANK SITES

Site Name and Location: LUCKY DISTRIBUTION CENTER, 700 CROCKER DRIVE VACAVILLE SOLANO COUNTY

1. YES **Distance** to production wells for municipal, domestic, agriculture, industry and other uses within 2000 feet of the site;
2. YES **Site maps**, to scale, of area impacted showing locations of former and existing tank systems, excavation contours and sample locations, boring and monitoring well elevation contours, gradients, and nearby surface waters, buildings, streets, and subsurface utilities;
3. YES **Figures** depicting lithology (cross section), treatment system diagrams; WELL LOGS & BORINGS
4. YES **Stockpiled** soil remaining on-site or off-site disposal (quantity); 3,300 yd³ AERATED
5. YES **Monitoring** wells remaining on-site, fate; 7 MW's
6. YES **Tabulated** results of all groundwater elevations and depths to water; 23-34' BGS SOUTHWEST 0.005 ft/ft
7. YES **Tabulated** results of all sampling and analyses:
   - YES Detection limits for confirmation sampling
   - N Lead analyses
8. YES **Concentration** contours of contaminants found and those remaining in soil and groundwater, both on-site and off-site:
   - YES Lateral extent of soil contamination
   - YES Vertical extent of soil contamination
   - YES Lateral extent of groundwater contamination
   - YES Vertical extent of groundwater contamination

   TPHd @ 45' 110 µg/kg TPHd; @ 55' 420 µg/l TPHd

   TANK AREA 1: 4 X 12,000 gallon DIESE[illegible]; TANK AREA 2: 6 X 12,000 gallon DI[illegible]; 30' FROM TANK PIT; MW-1 140 mg/l[illegible] 26 MARCH 97; MW-7 66 mg/l[illegible] 26 MARCH 97
9. N/A **Zone of influence** calculated and assumptions used for subsurface remediation system and the zone of capture attained for the soil and groundwater remediation system; BAILED FREE PRODUCT
10. YES **Reports / information**
    - YES Unauthorized Release Form (URF) 11/91
    - YES QMRs (Dates) 12/92 2/93 5/93 9/93 10/93 8/94 12/94
    - — PAR
    - — FRP
    - YES Other (report name) SOIL BORING & MW INSTALLATION 8/92;
    - YES Well and boring logs
11. YES **Best Available Technology** (BAT) used or an explanation for not using BAT; OVEREXCAVATION
12. YES **Reasons** why "background" was/is unattainable using BAT; LOW CONCENTRATION IN G.W. BAILED FREE PRODUCT TANK A[illegible]
13. YES **Mass balance** calculation of substance treated versus that remaining;
14. N **Assumptions**, parameters, calculations and model used in risk assessments, and fate and transport modeling;
15. YES **Rationale** why conditions remaining at site will not adversely impact water quality, health, or other beneficial uses; and
16. NO **WET or TCLP** results

REMOVED 12 ~~129~~ GALLONS OF FREE PRODUCT 1991 -> 1995

Comments: LOW RISK TO GROUNDWATER; BTEX & MTBE NONDETECT, 420 µg/l TPHd RESIDUAL TPHd IN SOIL AND GROUNDWATER LIMITED TO AREA OF FORMER TANK PIT APPROX 30' EAST OF FORMER PIT,

APPROX 209 gallons TPHd REMAINS IN SOIL @ 25-40' BGS TANK AREA [illegible]
4 gallons DISSOLVED TPHd IN SHALLOW GW TK AREA 2
182 gallons TPHd REMAIN IN BACKFILL IN TANK AREA 1

NFAR CONCUR

By:	J. BRATHOVDE
Date:	1 MAY 98

JEB

RECORDING REQUESTED BY:
Fidelity National Title Company
Escrow No.: 06-228872-DD
Locate No.: CAFNT0948-0948-0001-0000228872
Title No.: 06-228872

When Recorded Mail Document and Tax Statement To:
Lucky (Fla) NoCAL Investor LLC
250 Parkcenter Boulevard
Boise, Idaho 83706
Attn: Susan A. McMillan, Esq.
Albertsons LLC

Recorded in Official Records, Solano County
Marc C. Tonnesen
Assessor/Recorder

12/22/2006
2:31 PM
AR21
06

02 Fidelity Title Co

Doc#: 200600162306

Titles: 1 **Pages:** 7

Fees	25.00
Taxes	0.00
Other	0.00
PAID	$25.00

APN: PTN: 106-240-230 and 106-240-240

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $ — 0 — **City Transfer Tax is $ —0—**
[ ] 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 **Vacaville**,
"The grantors and the grantees in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property, R & T 11925." This conveyance is a lot line adjustment for sewer purposes only. This is a bona fide gift and the grantor received nothing in return. R&T 11911
FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Lucky Stores Properties, Inc., a Delaware Corporation, Successor by Merger to LKS Properties, a California Corporation

hereby GRANT(S) to Lucky (Fla) NoCal Investor LLC, a Delaware Limited Liability Company

the following described real property in the City of **Vacaville**, County of **Solano**, State of **California**:
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: December 7, 2006

LUCKY STORES PROPERTIES, INC., a Delaware Corporation:

STATE OF ~~CALIFORNIA~~ IDAHO)
COUNTY OF ADA)
ON December 7, 2006 before me,
Stacie Zenovich
(here insert name and title of the officer), personally appeared Paul Rowan, Authorized Signatory,
personally known to me (or 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.

Witness my hand and official seal.

Signature _____ (Seal)

STACIE D. ZENOVICH NOTARY PUBLIC STATE OF IDAHO

MY COMMISSION EXPIRES
May 14, 2008
BONDED THRU NOTARY PUBLIC UNDERWRITERS

MAIL TAX STATEMENTS AS DIRECTED ABOVE

FD-213 (Rev 7/96)
(grantfil)(07-06)

GRANT DEED

Exhibit "A"
TRANSFER PARCEL

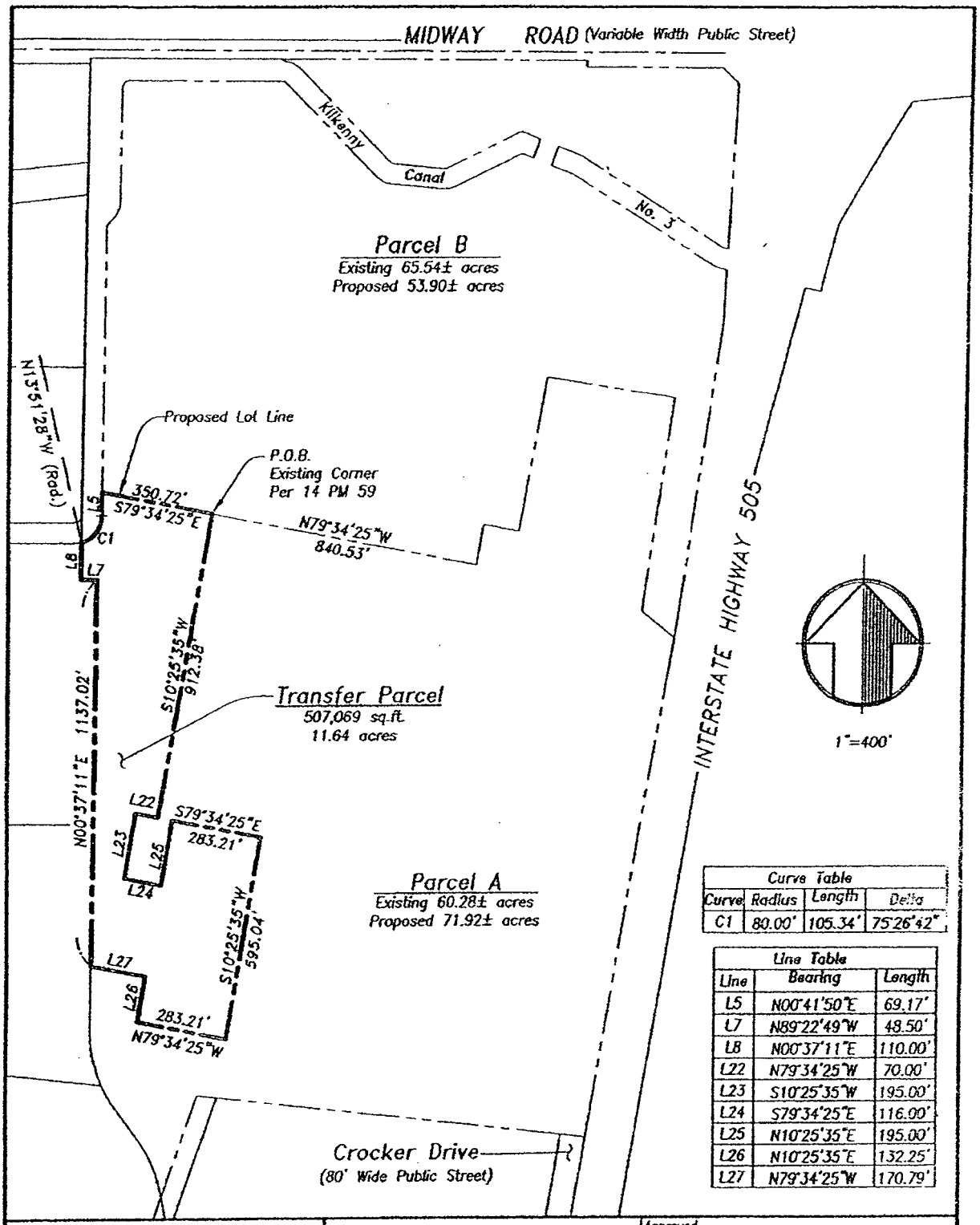
All that certain real property situate in the City of Vacaville, County of Solano, State of California, being a portion of Parcel "B" as shown on that certain Parcel Map filed for record January 17, 1978 in Book 14 of Parcel Maps at Page 59 in the Office of the Solano County Recorder, more particularly described as follows:

Beginning at a point on the southerly line of said Parcel "B" at the westerly terminus of that course shown on said map as North 79°34'25" West 840.53 feet; thence along the easterly, southerly and westerly lines of said Parcel "B" the following courses: South 10°25'35" West, 912.38 feet; thence North 79°34'25" West, 70.00 feet; thence South 10°25'35" West, 195.00 feet; thence South 79°34'25" East, 116.00 feet; thence North 10°25'35" East, 195.00 feet; thence South 79°34'25" East, 283.21 feet; thence South 10°25'35" West, 595.04 feet; thence North 79°34'25" West, 283.21 feet; thence North 10°25'35" East, 132.25 feet; thence North 79°34'25" West, 170.79 feet; thence North 00°37'11" East, 1137.02 feet; thence North 89°22'49" West, 48.50 feet; thence North 00°37'11" East, 110.00 feet to a non tangent curve concave northwesterly having a radius of 80.00 feet, from which point the radius bears North 13°51'28" West; thence northeasterly along the arc of said curve 105.34 feet through a central angle of 75°26'42"; thence North 00°41'50" East, 69.17 feet to the intersection with the westerly prolongation of said course in the southerly line of said Parcel "B" shown as North 79°34'25" West, 840.53 feet; thence leaving said westerly line, along said prolongation South 79°34'25" East, 350.72 feet to the point of beginning.

Containing 11.64 acres more or less.

Bearings used in this description are identical to those shown on said Parcel Map.

LICENSED LAND SURVEYOR
TY HAWKINS
No. 7973
Exp. 12/31/06
STATE OF CALIFORNIA



Curve Table			
Curve	Radius	Length	Delta
C1	80.00'	105.34'	75°26'42"

Line Table		
Line	Bearing	Length
L5	N00°41'50"E	69.17'
L7	N89°22'49"W	48.50'
L8	N00°37'11"E	110.00'
L22	N79°34'25"W	70.00'
L23	S10°25'35"W	195.00'
L24	S79°34'25"E	116.00'
L25	N10°25'35"E	195.00'
L26	N10°25'35"E	132.25'
L27	N79°34'25"W	170.79'

Mountain Pacific Surveys
Land Surveying • Mapping • Planning
1505 W. Texas Street
Fairfield, CA 94533
PH (707) 425-6234
FAX (707) 425-1969

Plat To Accompany Legal Description Transfer Parcel From Parcel B To Parcel A as Parcels are Shown in Book 14 of Parcel Maps at Page 59 Solano County Records.
Vacaville, California

Approved			
Drawn	TH	Scale	1"=400'
Date	10/19/06	Sheet No.	2
Proj. No.	506073	of	2

Government Code 27361.7

I certify under penalty of perjury that the notary seal on the document to which this statement is attached reads as follows:

Name of Notary Stacie D. Zenovich

Commission Number

Place of Execution Boise, Idaho

Date Commission Expires May 14, 2008

Bonded thru Notary Public Underwriters

Date: 12-21-06

Doris M. Deforest

Signature

FIDELITY NATIONAL TITLE COMPANY

Firm Name (if any)

s:\recorder\forms\notary seal

RECORDING REQUESTED BY:
Fidelity National Title Company
Escrow No.: 06-**228872**-DD
Locate No.: CAFNT0948-0948-0001-0000228872
Title No.: 06-**228872**

When Recorded Mail Document and Tax Statement To:
Lucky (Fla) NoCAL Investor LLC

APN: PTN: 106-240-230 and 106-240-240

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $ **City Transfer Tax is $**
[ ] 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 **Vacaville**,
"The grantors and the grantees in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property, R & T 11925."

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Lucky Sotres Properties, Inc., a Delaware Corporation, Successor by Merger of LKS Properties, a California Corporation

hereby GRANT(S) to Lucky (Fla) NoCal Investor LLC , a California Limited Liability Company

the following described real property in the City of **Vacaville**, County of **Solano**, State of **California**:
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: December 1, 2006

STATE OF ~~CALIFORNIA~~ IDAHO)
COUNTY OF _____)
ON _____ before me,
_____
(here insert name and title of the officer), personally appeared _____
_____,
personally known to me (or 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.

Witness my hand and official seal.

Signature _____ (Seal)

MY COMMISSION EXPIRES: _____

_____
LUCKY STORES PROPERTIES, INC., a Delaware Corporation:

BY: _____

BY: _____

_____

_____

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Exhibit "A"
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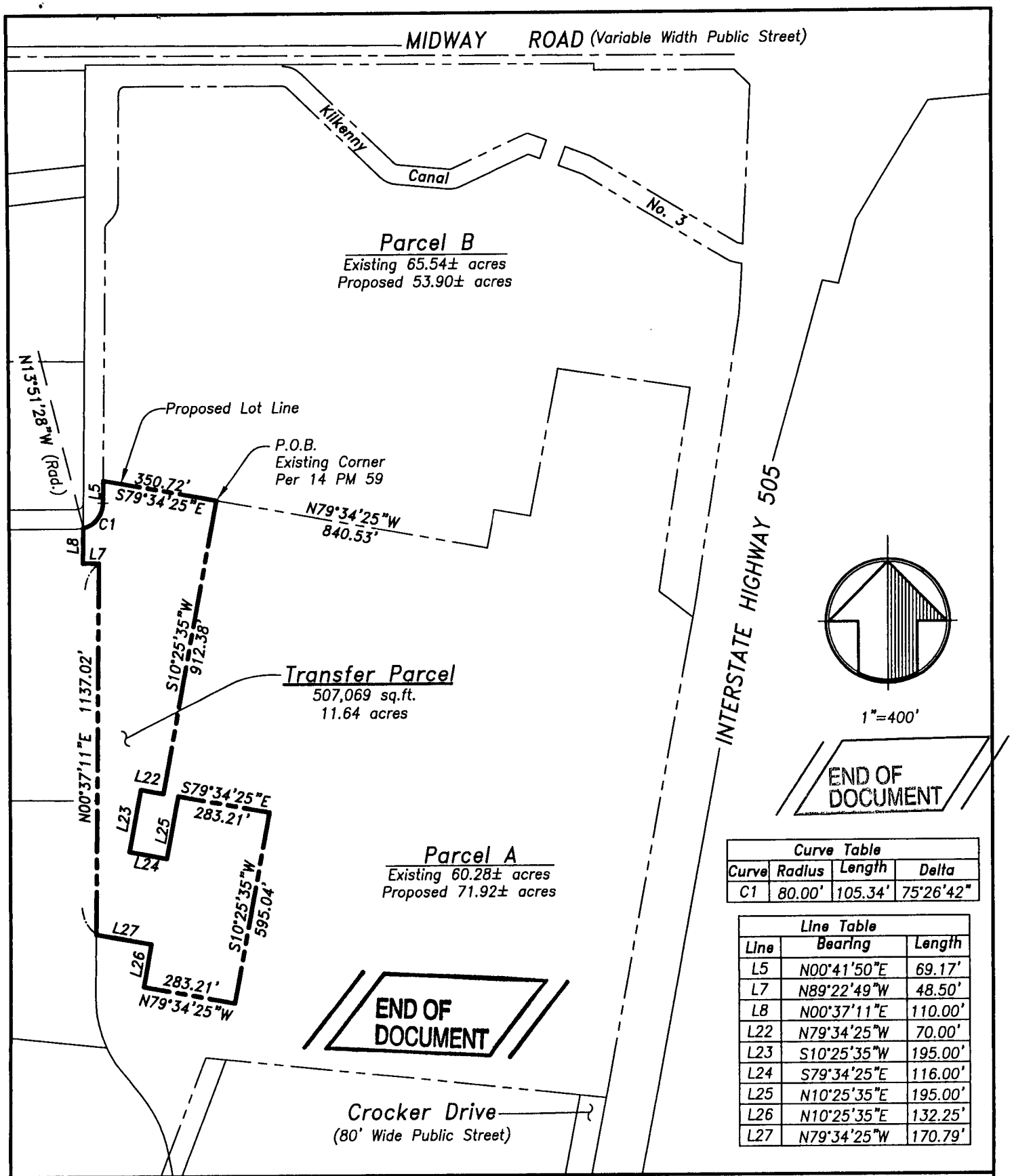
Containing 11.64 acres more or less.

Bearings used in this description are identical to those shown on said Parcel Map.

LICENSED LAND SURVEYOR
TY HAWKINS
No. 7973
Exp. 12/31/06
STATE OF CALIFORNIA



Curve Table			
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Mountain Pacific Surveys
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1505 W. Texas Street
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PH (707) 425-6234
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Plat To Accompany Legal Description Transfer Parcel From Parcel B To Parcel A as Parcels are Shown In Book 14 of Parcel Maps at Page 59 Solano County Records. Vacaville, California

Approved			
Drawn	TH	Scale	1"=400'
Date	10/19/06	Sheet No.	2
Proj. No.	506073	of	2

Appendix D ENVIRONMENTAL AGENCY DATABASE SEARCH REPORT

Vacant Warehouse
700 Crocker Drive
Vacaville, CA 95688

Inquiry Number: 4956081.2s
June 05, 2017

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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Detail Map	3
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Map Findings	8
Orphan Summary	70
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Physical Setting Source Records Searched	PSGR-1

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) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

700 CROCKER DRIVE
VACAVILLE, CA 95688

COORDINATES

Latitude (North):	38.4109990 - 38˚ 24' 39.59''
Longitude (West):	121.9489920 - 121˚ 56' 56.37''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	591761.8
UTM Y (Meters):	4251734.0
Elevation:	108 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5629044 ALLENDALE, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140606
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
700 CROCKER DRIVE
VACAVILLE, CA 95688

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	ALBERTSONS 8795	700 CROCKER AVE	FINDS, ECHO		TP
A2	LUCKY'S DISTRIBUTION	700 CROCKER DR	RGA LUST		TP
A3	SAVE MART SUPERMARKE	700 CROCKER DR	UST		TP
A4	SAVE MART SUPERMARKE	700 CROCKER DR	LUST, AST, HIST UST, HIST CORTESE		TP
A5	LUCKY'S DISTRIBUTION	700 CROCKER DR	LUST		TP
A6	SAVE MART SUPERMARKE	700 CROCKER DR	RCRA-SQG, SWEEPS UST, HIST UST, CA FID UST,...		TP
A7	LUCKY'S DISTRIBUTION	700 CROCKER DR	FINDS		TP
A8	ETS	700 CROCKER DR	NPDES		TP
B9	MIDWAY FOODS, INC. D	4819 MIDWAY ROAD	EMI, Notify 65	Higher	124, 0.023, North
B10	OATES COUNTRY STORE	4819 MIDWAY RD	UST, SWEEPS UST, HIST UST	Higher	124, 0.023, North
B11	OATS COUNTRY STORE	4819 MIDWAY	LUST, HIST CORTESE	Higher	124, 0.023, North
B12	OATES COUNTRY STORE	4819 MIDWAY RD	CA FID UST	Higher	124, 0.023, North
B13	MIDWAY FOODS INC	4819 MIDWAY RD	EDR Hist Auto	Higher	124, 0.023, North
C14	LIQUID CARBONICS	871 EUBANKS DR	SWEEPS UST, CA FID UST, WDS	Higher	405, 0.077, SW
C15	MG INDUSTRIES	871 EUBANKS DR	UST	Higher	405, 0.077, SW
16	MATHESON TRI-GAS, IN	871 EUBANKS	AST	Higher	653, 0.124, SW
D17	FIRE STATION, DIXON	7337 PADDON RD	CA FID UST	Higher	1017, 0.193, NNW
D18	FIRE STATION DIXON D	7337 PADDON RD	UST	Higher	1017, 0.193, NNW
19	INTERNATIONAL HOME F	500 CROCKER DRIVE	RCRA-SQG, LUST, SWEEPS UST, CHMIRS, EMI, HIST...	Higher	1370, 0.259, South
E20	PACIFIC SPECTRUM GLA	909 ALDRIDGE	LUST, SWEEPS UST, HIST CORTESE	Higher	2414, 0.457, SSW
21	VACAVILLE ELEMENTARY	WEST OF LEISURE TOWN	ENVIROSTOR, SCH	Lower	2466, 0.467, East
E22	ALL WEATHER INSULATE	929 ALDRIDGE RD	LUST, UST, EMI, WDS	Higher	2627, 0.498, SSW
23	SPRIG CIRCUITS, INC.	765-A EUBANKS DRIVE	RCRA-LQG, ENVIROSTOR	Higher	3806, 0.721, SSW
24	NORTH VILLAGE ELEMEN	VACA VALLEY PARKWAY/	ENVIROSTOR, SCH	Lower	5049, 0.956, SE

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
ALBERTSONS 8795 700 CROCKER AVE VACAVILLE, CA 95688	FINDS Registry ID:: 110018993847 ECHO	N/A
LUCKY'S DISTRIBUTION 700 CROCKER DR VACAVILLE, CA	RGA LUST	N/A
SAVE MART SUPERMARKE 700 CROCKER DR VACAVILLE, CA 95688	UST Database: SOLANO CO. UST, Date of Government Version: 03/15/2017 Facility Id: 50027 Facility Status: I	N/A
SAVE MART SUPERMARKE 700 CROCKER DR VACAVILLE, CA 95688	LUST Database: SOLANO CO. LUST, Date of Government Version: 11/29/2016 Database: LUST, Date of Government Version: 03/13/2017 Status: Completed - Case Closed Facility Id: 50027 Global Id: T0609500388 Facility Status: I AST HIST UST HIST CORTESE Reg Id: 480140	N/A
LUCKY'S DISTRIBUTION 700 CROCKER DR VACAVILLE, CA 95688	LUST Database: LUST REG 5, Date of Government Version: 07/01/2008 Status: Case Closed	N/A
SAVE MART SUPERMARKE 700 CROCKER DR VACAVILLE, CA 95688	RCRA-SQG EPA ID:: CAD983617036 SWEEPS UST Status: A Tank Status: A Comp Number: 50027 HIST UST Facility Id: 00000011522 CA FID UST	CAD983617036

EXECUTIVE SUMMARY

	Facility Id: 48000280 Status: A	
	CHMIRS OES Incident Number: 9-2247	
	EMI Facility Id: 5165	
	HAZNET GEPAID: CAD983617036	
	WDS Facility Status: A Facility Id: 5S48I001177	
LUCKY'S DISTRIBUTION 700 CROCKER DR VACAVILLE, CA 95688	FINDS Registry ID:: 110066556471	N/A
ETS 700 CROCKER DR VACAVILLE, CA 95688	NPDES Facility Status: Active	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

NPL..... National Priority 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 RCRA generators list

RCRA-LQG..... RCRA - Large Quantity Generators
RCRA-CESQG..... RCRA - Conditionally Exempt Small Quantity Generator

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 landfill and/or solid waste disposal site lists

SWF/LF..... Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
SLIC..... Statewide SLIC Cases

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

EXECUTIVE SUMMARY

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
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

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
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
ROD	Records Of Decision
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

EXECUTIVE SUMMARY

COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
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
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
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
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
UIC	UIC Listing
WASTEWATER PITS	Oil Wastewater Pits Listing
WIP	Well Investigation Program Case List

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Cleaner	EDR Exclusive Historic Dry Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF	Recovered Government Archive Solid Waste Facilities List

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.

EXECUTIVE SUMMARY

STANDARD ENVIRONMENTAL RECORDS

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 01/30/2017 has revealed that there are 3 ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SPRIG CIRCUITS, INC. Facility Id: 71002695 Status: Inactive - Needs Evaluation	***765-A EUBANKS DRIVE***	***SSW 1/2 - 1 (0.721 mi.)***	***23***	***60***

Lower Elevation	Address	Direction / Distance	Map ID	Page
VACAVILLE ELEMENTARY Facility Id: 60001623 Status: No Further Action	***WEST OF LEISURE TOWN***	***E 1/4 - 1/2 (0.467 mi.)***	***21***	***55***
NORTH VILLAGE ELEMEN Facility Id: 48020003 Status: No Action Required	***VACA VALLEY PARKWAY/***	***SE 1/2 - 1 (0.956 mi.)***	***24***	***67***

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 4 LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OATS COUNTRY STORE Database: LUST REG 5, Date of Government Version: 07/01/2008 Database: LUST, Date of Government Version: 03/13/2017 Status: Completed - Case Closed Status: Case Closed Global Id: T0609500352	***4819 MIDWAY***	***N 0 - 1/8 (0.023 mi.)***	***B11***	***31***
INTERNATIONAL HOME F Database: LUST REG 5, Date of Government Version: 07/01/2008 Database: LUST, Date of Government Version: 03/13/2017	***500 CROCKER DRIVE***	***S 1/4 - 1/2 (0.259 mi.)***	***19***	***37***

Status: Completed - Case Closed
Status: Case Closed
Global Id: T0609500397

PACIFIC SPECTRUM GLA ***909 ALDRIDGE*** ***SSW 1/4 - 1/2 (0.457 mi.)*** ***E20*** ***53***
Database: LUST REG 5, Date of Government Version: 07/01/2008
Database: LUST, Date of Government Version: 03/13/2017
Status: Completed - Case Closed
Status: Case Closed
Global Id: T0609500407

ALL WEATHER INSULATE ***929 ALDRIDGE RD*** ***SSW 1/4 - 1/2 (0.498 mi.)*** ***E22*** ***58***
Database: SOLANO CO. LUST, Date of Government Version: 11/29/2016
Facility Id: 50022
Facility Status: I

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 3 UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OATES COUNTRY STORE	***4819 MIDWAY RD***	***N 0 - 1/8 (0.023 mi.)***	***B10***	***27***
Database: SOLANO CO. UST, Date of Government Version: 03/15/2017 Database: UST, Date of Government Version: 03/12/2017 Facility Id: 80047 Facility Status: I Facility Status: A Facility Id: 80047 Facility Id: 48-000-080047				
MG INDUSTRIES	871 EUBANKS DR	SW 0 - 1/8 (0.077 mi.)	C15	35
Database: SOLANO CO. UST, Date of Government Version: 03/15/2017 Database: UST, Date of Government Version: 03/12/2017 Facility Id: 50073 Facility Status: I Facility Id: 50073				
FIRE STATION DIXON D	7337 PADDON RD	NNW 1/8 - 1/4 (0.193 mi.)	D18	36
Database: SOLANO CO. UST, Date of Government Version: 03/15/2017 Facility Id: 80155 Facility Status: I				

AST: A listing of aboveground storage tank petroleum storage tank locations.

A review of the AST list, as provided by EDR, and dated 07/06/2016 has revealed that there is 1 AST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MATHESON TRI-GAS, IN	871 EUBANKS	SW 0 - 1/8 (0.124 mi.)	16	35

EXECUTIVE SUMMARY

ADDITIONAL ENVIRONMENTAL RECORDS

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 2 SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OATES COUNTRY STORE Status: A Tank Status: A Comp Number: 80047	***4819 MIDWAY RD***	***N 0 - 1/8 (0.023 mi.)***	***B10***	***27***
LIQUID CARBONICS Status: A Tank Status: A Comp Number: 50073	***871 EUBANKS DR***	***SW 0 - 1/8 (0.077 mi.)***	***C14***	***33***

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 is 1 HIST UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OATES COUNTRY STORE Facility Id: 00000009104	***4819 MIDWAY RD***	***N 0 - 1/8 (0.023 mi.)***	***B10***	***27***

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 3 CA FID UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OATES COUNTRY STORE Facility Id: 48000245 Status: A	4819 MIDWAY RD	N 0 - 1/8 (0.023 mi.)	B12	32
LIQUID CARBONICS Facility Id: 48000750 Status: A	***871 EUBANKS DR***	***SW 0 - 1/8 (0.077 mi.)***	***C14***	***33***
FIRE STATION, DIXON Facility Id: 48000775 Status: I	7337 PADDON RD	NNW 1/8 - 1/4 (0.193 mi.)	D17	36

Other Ascertainable Records

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 3 HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
OATS COUNTRY STORE Reg Id: 480089	***4819 MIDWAY***	***N 0 - 1/8 (0.023 mi.)***	***B11***	***31***
INTERNATIONAL HOME F Reg Id: 480152	***500 CROCKER DRIVE***	***S 1/4 - 1/2 (0.259 mi.)***	***19***	***37***
PACIFIC SPECTRUM GLA Reg Id: 480167	***909 ALDRIDGE***	***SSW 1/4 - 1/2 (0.457 mi.)***	***E20***	***53***

Notify 65: 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.

A review of the Notify 65 list, as provided by EDR, and dated 12/16/2016 has revealed that there is 1 Notify 65 site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MIDWAY FOODS, INC. D	***4819 MIDWAY ROAD***	***N 0 - 1/8 (0.023 mi.)***	***B9***	***24***

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR Hist Auto: 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.

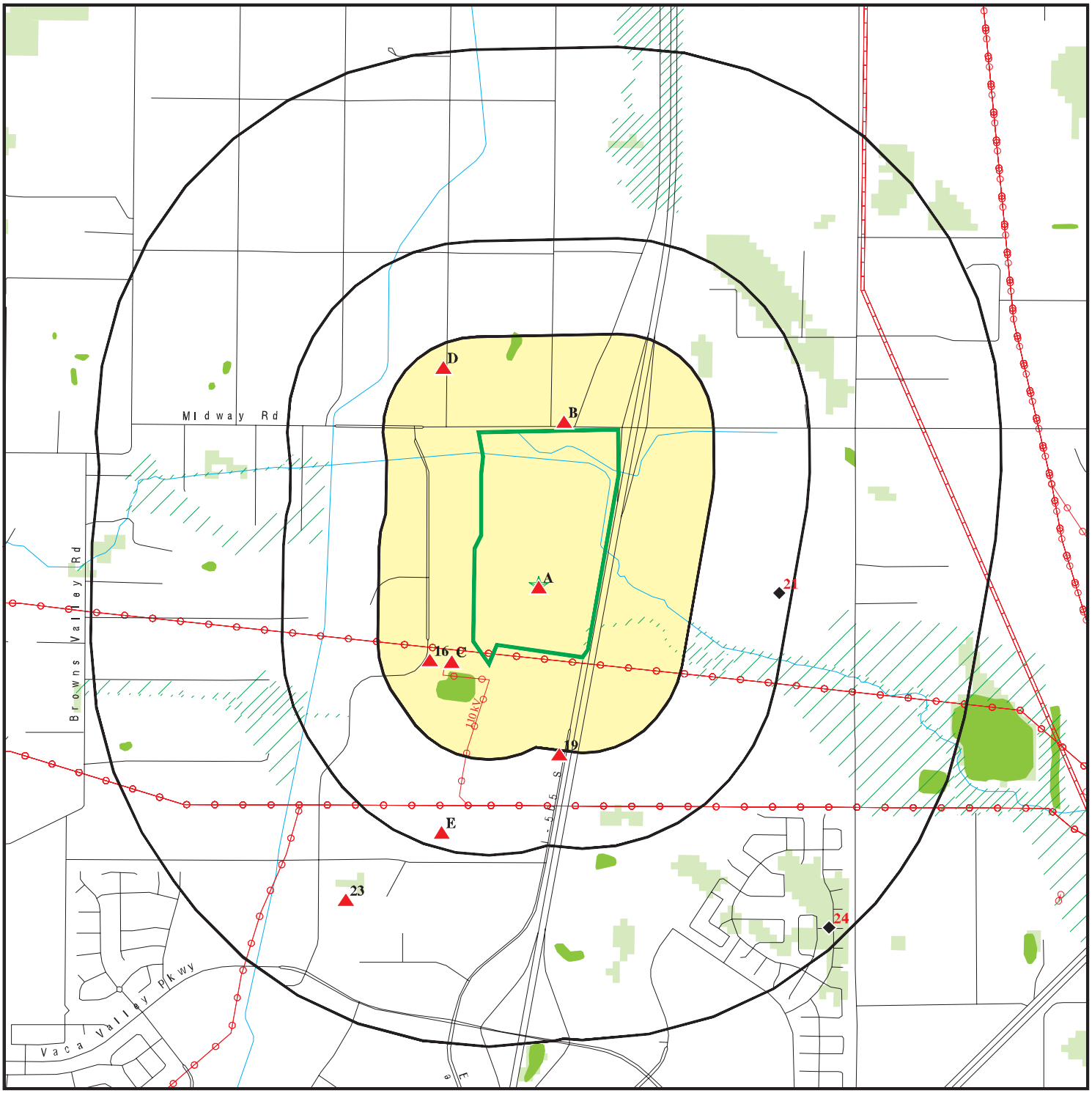
A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
MIDWAY FOODS INC	4819 MIDWAY RD	N 0 - 1/8 (0.023 mi.)	B13	32

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 4956081.2S



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

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

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: Vacant Warehouse	CLIENT: Stantec
ADDRESS: 700 Crocker Drive Vacaville CA 95688	CONTACT: Danielle Manning
	INQUIRY #: 4956081.2s
LAT/LONG: 38.410999 / 121.948992	DATE: June 05, 2017 2:31 pm

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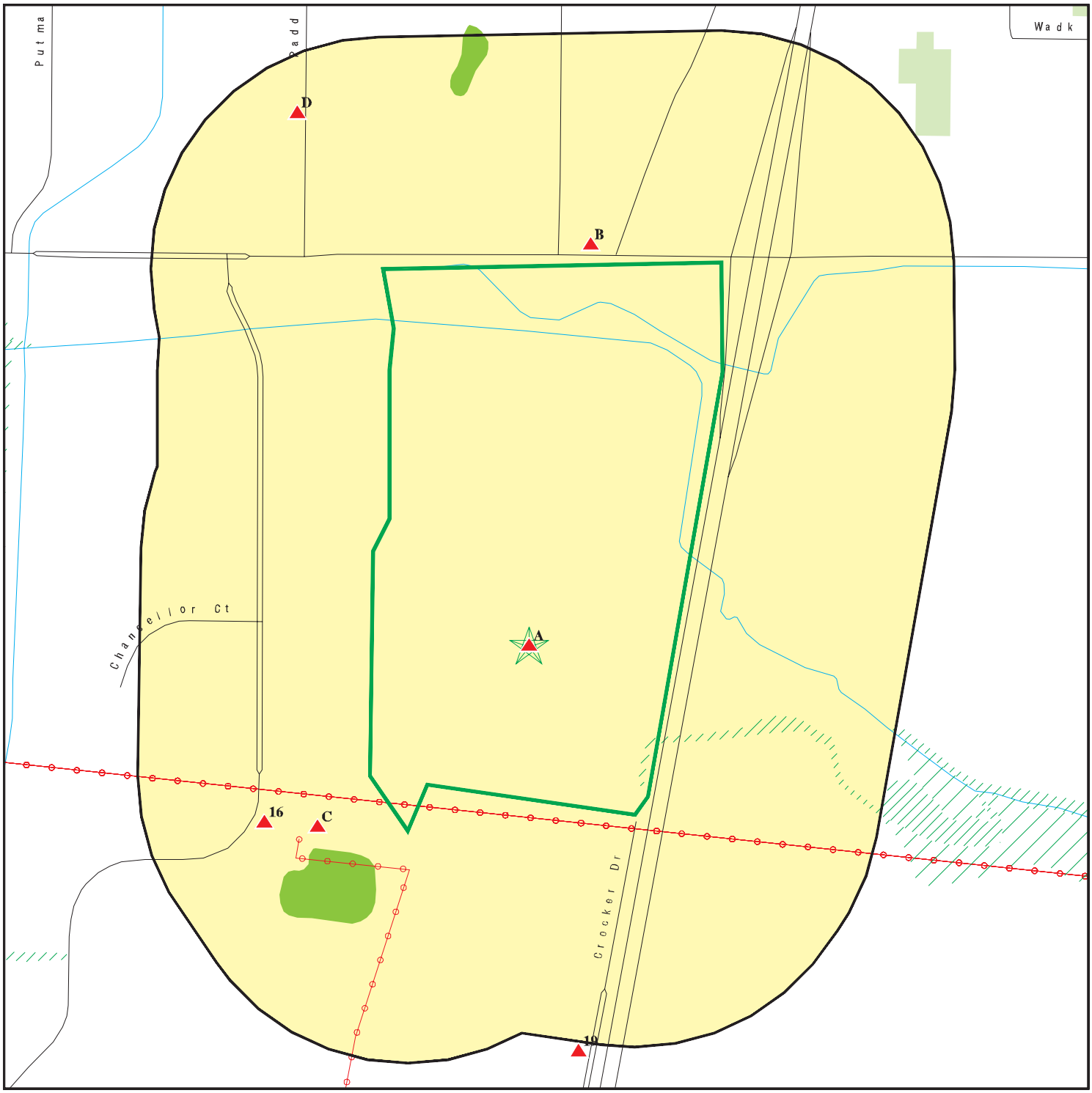
DETAIL MAP - 4956081.2S



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

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: Vacant Warehouse	CLIENT: Stantec
ADDRESS: 700 Crocker Drive Vacaville CA 95688	CONTACT: Danielle Manning
LAT/LONG: 38.410999 / 121.948992	INQUIRY #: 4956081.2s DATE: June 05, 2017 2:33 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	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	TP		NR	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		0	0	NR	NR	NR	0
RCRA-SQG	0.250	1	0	0	NR	NR	NR	1
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
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	TP		NR	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	1	2	NR	3
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
LUST	0.500	2	1	0	3	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
SLIC	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250	1	2	1	NR	NR	NR	4
AST	0.250	1	1	0	NR	NR	NR	2
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	TP		NR	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								
US HIST CDL	TP		NR	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	TP		NR	NR	NR	NR	NR	0
Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
SWEEPS UST	0.250	1	2	0	NR	NR	NR	3
HIST UST	0.250	2	1	0	NR	NR	NR	3
CA FID UST	0.250	1	2	1	NR	NR	NR	4
Local Land Records								
LIENS	TP		NR	NR	NR	NR	NR	0
LIENS 2	TP		NR	NR	NR	NR	NR	0
DEED	0.500		0	0	0	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	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
CHMIRS	TP	1	NR	NR	NR	NR	NR	1
LDS	TP		NR	NR	NR	NR	NR	0
MCS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	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	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.500		0	0	0	NR	NR	0
FINDS	TP	2	NR	NR	NR	NR	NR	2
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP	1	NR	NR	NR	NR	NR	1
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
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EMI	TP	1	NR	NR	NR	NR	NR	1
ENF	TP		NR	NR	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
HAZNET	TP	1	NR	NR	NR	NR	NR	1

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
ICE	TP		NR	NR	NR	NR	NR	0
HIST CORTESE	0.500	1	1	0	2	NR	NR	4
HWP	1.000		0	0	0	0	NR	0
HWT	0.250		0	0	NR	NR	NR	0
MINES	TP		NR	NR	NR	NR	NR	0
MWMP	0.250		0	0	NR	NR	NR	0
NPDES	TP	1	NR	NR	NR	NR	NR	1
PEST LIC	TP		NR	NR	NR	NR	NR	0
PROC	0.500		0	0	0	NR	NR	0
Notify 65	1.000		1	0	0	0	NR	1
UIC	TP		NR	NR	NR	NR	NR	0
WASTEWATER PITS	0.500		0	0	0	NR	NR	0
WDS	TP	1	NR	NR	NR	NR	NR	1
WIP	0.250		0	0	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		1	NR	NR	NR	NR	1
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP	1	NR	NR	NR	NR	NR	1
- Totals --		19	12	2	6	2	0	41

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 Target Property | **ALBERTSONS 8795**
700 CROCKER AVE
VACAVILLE, CA 95688 | **FINDS** | **1007738887**
ECHO | **N/A**

Site 1 of 8 in cluster A

Actual: 108 ft.

FINDS:

Registry ID: 110018993847

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.

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.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1007738887
Registry ID: 110018993847
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110018993847

A2 Target Property | **LUCKY'S DISTRIBUTION CENTER**
700 CROCKER DR
VACAVILLE, CA | **RGA LUST** | **S114645916**
N/A

Site 2 of 8 in cluster A

Actual: 108 ft.

RGA LUST:

2012	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2011	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2010	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2009	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2008	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2007	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2006	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2005	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2003	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2002	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2001	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
2000	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
1998	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
1997	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
1996	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
1995	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
1994	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR
1993	LUCKY'S DISTRIBUTION CENTER	700 CROCKER DR

A3 Target Property | **SAVE MART SUPERMARKETS** | **UST** | **U003729125**
700 CROCKER DR | **N/A**
VACAVILLE, CA 95688

Site 3 of 8 in cluster A

Actual: 108 ft.

SOLANO CO. UST:

Facility Id:	50027
Facility Status:	Inactive
Decode for Facility Status:	Closed
Facility Phone:	707-446-5900
Inventory Number:	1
Inventory Type:	Permanent Closure (192) Tank Removed 1/11/07
Inventory Description:	Not reported
Permit Expire/Last Service:	HAZARDOUS MATERIALS STUDY 06/30/07, 06/30/07
Last Service Date:	04/04/08
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose
Inventory Number:	2
Inventory Type:	General Underground Tank (110) Tank Removed 1/11/07
Inventory Description:	Not reported
Permit Expire/Last Service:	STORAGE TANK CLOSURE 06/30/07, 06/30/07
Last Service Date:	01/11/07
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

A4 Target Property | **SAVE MART SUPERMARKETS** | **LUST** | **U003641458**
700 CROCKER DR | **AST** | **N/A**
VACAVILLE, CA 95688 | **HIST UST**
HIST CORTESE

Site 4 of 8 in cluster A

Actual: 108 ft.

LUST:

Region:	STATE
Global Id:	T0609500388
Latitude:	38.410749
Longitude:	-121.948969
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	05/04/1998
Lead Agency:	SOLANO COUNTY LOP
Case Worker:	MCK
Local Agency:	SOLANO COUNTY LOP
RB Case Number:	480140
LOC Case Number:	50027
File Location:	Not reported
Potential Media Affect:	Aquifer used for drinking water supply
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0609500388
Contact Type:	Local Agency Caseworker
Contact Name:	MISTY C. KALTREIDER
Organization Name:	SOLANO COUNTY LOP

SAVE MART SUPERMARKETS (Continued) **U003641458**

Address: 675 TEXAS STREET, SUITE 5500
City: FAIRFIELD
Email: mkaltreider@solanocounty.com
Phone Number: 7077846765

Status History:
Global Id: T0609500388
Status: Completed - Case Closed
Status Date: 05/04/1998

Global Id: T0609500388
Status: Open - Case Begin Date
Status Date: 02/16/1989

Global Id: T0609500388
Status: Open - Site Assessment
Status Date: 08/13/1992

Global Id: T0609500388
Status: Open - Site Assessment
Status Date: 05/28/1993

Regulatory Activities:
Global Id: T0609500388
Action Type: Other
Date: 02/26/1989
Action: Leak Discovery

Global Id: T0609500388
Action Type: Other
Date: 02/16/1989
Action: Leak Stopped

Global Id: T0609500388
Action Type: Other
Date: 11/19/1991
Action: Leak Reported

Global Id: T0609500388
Action Type: ENFORCEMENT
Date: 06/17/1998
Action: Closure/No Further Action Letter

SOLANO CO. LUST:
Region: SOLANO
Facility ID: 50027
Facility Status: I
Facility Status Desc: Inactive
Facility Phone: 707-446-5900
Program: 29S
Inventory Number: 1
Inventory Type: LOP - Closed Site (128)
Inventory Description: Not reported
Last service/permit exp: REVIEW REPORTS / POST REM MONIT
Last service date: 06/13/2007

SAVE MART SUPERMARKETS (Continued) **U003641458**

AST:

Certified Unified Program Agencies:	Not reported
Owner:	SAVE MART SUPERMARKETS
Total Gallons:	Not reported
CERSID:	10153195
Facility ID:	48-000-050027
Business Name:	Save Mart Supermarkets
Phone:	707-446-5925
Fax:	Not reported
Mailing Address:	700 CROCKER DR
Mailing Address City:	VACAVILLE
Mailing Address State:	CA
Mailing Address Zip Code:	Not reported
Operator Name:	Save Mart Supermarkets
Operator Phone:	707-446-5925
Owner Phone:	209-577-1600
Owner Mail Address:	1800 Standiford Ave.
Owner State:	CA
Owner Zip Code:	Not reported
Owner Country:	United States
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:	CAD983617036

HIST UST:

File Number:	000212FD
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/000212FD.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:

HIST CORTESE:

Region: CORTESE

SAVE MART SUPERMARKETS (Continued) **U003641458**

Facility County Code: 48
Reg By: LTNKA
Reg Id: 480140

A5 Target Property **LUCKY'S DISTRIBUTION CENTER** **LUST** **S103934414**
700 CROCKER DR **N/A**
VACAVILLE, CA 95688

Site 5 of 8 in cluster A

Actual: 108 ft.

LUST REG 5:
Region: 5
Status: Case Closed
Case Number: 480140
Case Type: Drinking Water Aquifer affected
Substance: DIESEL
Staff Initials: JIM
Lead Agency: Local
Program: LUST
MTBE Code: 3

A6 Target Property **SAVE MART SUPERMARKETS** **RCRA-SQG** **1000597680**
700 CROCKER DR **SWEEPS UST** **CAD983617036**
VACAVILLE, CA 95688 **HIST UST**
CA FID UST
Site 6 of 8 in cluster A **CHMIRS**
EMI
Actual: 108 ft. **HAZNET**
WDS

RCRA-SQG:
Date form received by agency: 05/31/2007
Facility name: SAVE MART SUPERMARKETS
Facility address: 700 CROCKER DR
VACAVILLE, CA 95688
EPA ID: CAD983617036
Contact: HOWARD W FAULKNER
Contact address: 700 CROCKER DR
VACAVILLE, CA 95688
Contact country: US
Contact telephone: 707-446-5925
Contact email: HOWARD.FAULKNER@ALBERTSONSLLC.COM
EPA Region: 09
Land type: Private
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: SAVE MART SUPERMARKETS
Owner/operator address: 1800 STANDIFORD AVE
MODESTO, CA 95350
Owner/operator country: US

SAVE MART SUPERMARKETS (Continued) **1000597680**

Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 02/23/2007
Owner/Op end date: Not reported

Owner/operator name: SAVE MART SUPERMARKETS
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 02/23/2007
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

Universal Waste Summary:
Waste type: Batteries
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

. Waste code: D008
. Waste name: LEAD

Historical Generators:
Date form received by agency: 09/01/1996
Site name: LUCKY STORES INC
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: LUCKY STORES INC
Classification: Small Quantity Generator

Date form received by agency: 04/29/1993
Site name: LUCKY STORES INC
Classification: Small Quantity Generator

Violation Status: No violations found

SAVE MART SUPERMARKETS (Continued) **1000597680**

Evaluation Action Summary:

Evaluation date:	06/18/2009
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State

Evaluation date:	03/31/2006
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State Contractor/Grantee

SWEEPS UST:

Status:	Active
Comp Number:	50027
Number:	1
Board Of Equalization:	Not reported
Referral Date:	09-17-93
Action Date:	09-17-93
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	48-000-050027-000001
Tank Status:	A
Capacity:	20000
Active Date:	08-30-93
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	2

Status:	Active
Comp Number:	50027
Number:	1
Board Of Equalization:	Not reported
Referral Date:	09-17-93
Action Date:	09-17-93
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	48-000-050027-000002
Tank Status:	A
Capacity:	20000
Active Date:	08-30-93
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	Not reported

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000011522
Facility Type:	Other
Other Type:	PRIVATE USE
Contact Name:	HAROLD HUGHES
Telephone:	7074467300

SAVE MART SUPERMARKETS (Continued) **1000597680**

Owner Name:	LUCKY STORES, INC.
Owner Address:	1701 MARINA BLVD.
Owner City,St,Zip:	SAN LEANDRO, CA 94577
Total Tanks:	0008
Tank Num:	001
Container Num:	VF-1
Year Installed:	1977
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	002
Container Num:	VF-2
Year Installed:	1977
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	003
Container Num:	VF3
Year Installed:	1977
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	004
Container Num:	VF-4
Year Installed:	1977
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	005
Container Num:	VF5
Year Installed:	1977
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	006
Container Num:	VF-6
Year Installed:	1979
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported

SAVE MART SUPERMARKETS (Continued) **1000597680**

Leak Detection:	Stock Inventor
Tank Num:	007
Container Num:	VF-7
Year Installed:	1979
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	008
Container Num:	VF-8
Year Installed:	1979
Tank Capacity:	00012000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

CA FID UST:

Facility ID:	48000280
Regulated By:	UTNKA
Regulated ID:	00011522
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	7074465900
Mail To:	Not reported
Mailing Address:	700 CROCKER DR
Mailing Address 2:	Not reported
Mailing City,St,Zip:	VACAVILLE 95688
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

CHMIRS:

OES Incident Number:	9-2247
OES notification:	05/25/1999
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

SAVE MART SUPERMARKETS (Continued) **1000597680**

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:	No
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:	1999
Agency:	Lucky Stores - Vacaville
Incident Date:	5/24/199912:00:00 AM
Admin Agency:	Solano County Environmental Management
Amount:	Not reported
Contained:	Yes
Site Type:	Merchant/Business
E Date:	Not reported
Substance:	diluted battery acid
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:	broken water pipe leaked into battery room, per city public works material had PH reading of 1.9, flowed into clarifier then into sewer then into holding pond on Lucky property.

EMI:

Year:	1998
County Code:	48
Air Basin:	SV

SAVE MART SUPERMARKETS (Continued) **1000597680**

Facility ID:	5165
Air District Name:	YS
SIC Code:	5141
Air District Name:	YOLO/SOLANO 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:	1999
County Code:	48
Air Basin:	SV
Facility ID:	5165
Air District Name:	YS
SIC Code:	5141
Air District Name:	YOLO/SOLANO 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:	1000597680
Year:	2015
GEPAID:	CAD983617036
Contact:	NICOLE M. BALLIET
Telephone:	2095486589
Mailing Name:	Not reported
Mailing Address:	1800 STANDIFORD AVE
Mailing City,St,Zip:	MODESTO, CA 953500180
Gen County:	Solano
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.119
Cat Decode:	Unspecified organic liquid mixture
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	Solano

envid:	1000597680
Year:	2015
GEPAID:	CAD983617036
Contact:	NICOLE M. BALLIET
Telephone:	2095486589

SAVE MART SUPERMARKETS (Continued) **1000597680**

Mailing Name:	Not reported
Mailing Address:	1800 STANDIFORD AVE
Mailing City,St,Zip:	MODESTO, CA 953500180
Gen County:	Solano
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.25
Cat Decode:	Alkaline solution without metals pH >= 12.5
Method Decode:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Facility County:	Solano

envid:	1000597680
Year:	2015
GEPAID:	CAD983617036
Contact:	NICOLE M. BALLIET
Telephone:	2095486589
Mailing Name:	Not reported
Mailing Address:	1800 STANDIFORD AVE
Mailing City,St,Zip:	MODESTO, CA 953500180
Gen County:	Solano
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	0.68
Cat Decode:	Unspecified organic liquid mixture
Method Decode:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Facility County:	Solano

envid:	1000597680
Year:	2015
GEPAID:	CAD983617036
Contact:	NICOLE M. BALLIET
Telephone:	2095486589
Mailing Name:	Not reported
Mailing Address:	1800 STANDIFORD AVE
Mailing City,St,Zip:	MODESTO, CA 953500180
Gen County:	Solano
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.5075
Cat Decode:	Off-specification, aged or surplus organics
Method Decode:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Facility County:	Solano

envid:	1000597680
Year:	2015

SAVE MART SUPERMARKETS (Continued) **1000597680**

GEPAID:	CAD983617036
Contact:	NICOLE M. BALLIET
Telephone:	2095486589
Mailing Name:	Not reported
Mailing Address:	1800 STANDIFORD AVE
Mailing City,St,Zip:	MODESTO, CA 953500180
Gen County:	Solano
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	2.1269
Cat Decode:	Off-specification, aged or surplus organics
Method Decode:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Facility County:	Solano

Click this hyperlink while viewing on your computer to access
218 additional CA_HAZNET: record(s) in the EDR Site Report.

WDS:

Facility ID:	5S 48I001177
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:	0
Facility Telephone:	5106784871
Facility Contact:	JACK DUKE
Agency Name:	LUCKY STORES INC
Agency Address:	1701 Marina Blvd
Agency City,St,Zip:	San Leandro 945774201
Agency Contact:	DAN CURRY
Agency Telephone:	5106784600
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

SAVE MART SUPERMARKETS (Continued) **1000597680**

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.

A7 Target Property | **LUCKY'S DISTRIBUTION CENTER** | **FINDS** | **1023358649**
700 CROCKER DR | **N/A**
VACAVILLE, CA 95688

Site 7 of 8 in cluster A

Actual: 108 ft.

FINDS:

Registry ID: 110066556471

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A8 Target Property | **ETS** | **NPDES** | **S119084994**
700 CROCKER DR | **N/A**
VACAVILLE, CA 95688

Site 8 of 8 in cluster A

Actual: 108 ft.

NPDES:

Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	5S
Regulatory Measure Id:	322496
Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	5S48I020743
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:	5/9/2008
PROCESSED DATE:	3/28/2007

ETS (Continued) **S119084994**

STATUS CODE NAME:	Active
STATUS DATE:	3/28/2007
PLACE SIZE:	125
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Howard Faulkner
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	916-849-3397
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	sail334away@gmail.com
OPERATOR NAME:	Save Mart Supermarkets
OPERATOR ADDRESS:	PO Box 4278
OPERATOR CITY:	Modesto
OPERATOR STATE:	California
OPERATOR ZIP:	95350
OPERATOR CONTACT NAME:	John Davis
OPERATOR CONTACT TITLE:	Executive Director of Dist.
OPERATOR CONTACT PHONE:	916-212-3609
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	john.davis@savemart.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:	916-849-3397
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:	Sacramento River
CERTIFIER NAME:	John Davis II
CERTIFIER TITLE:	Director of Distribution
CERTIFICATION DATE:	23-JUN-15
PRIMARY SIC:	4213-Trucking, Except Local
SECONDARY SIC:	4225-General Warehousing and Storage
TERTIARY SIC:	Not reported
Npdes Number:	CAS000001
Facility Status:	Active

ETS (Continued) **S119084994**

Agency Id:	0
Region:	5S
Regulatory Measure Id:	322496
Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	5S48I020743
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	03/28/2007
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Save Mart Supermarkets
Discharge Address:	PO Box 4278
Discharge City:	Modesto
Discharge State:	California
Discharge Zip:	95350
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

ETS (Continued) **S119084994**

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

B9 **MIDWAY FOODS, INC. DBA OATES COUNTRY STORE** **EMI** **U000072198**
North **4819 MIDWAY ROAD** **Notify 65** **N/A**
< 1/8 **VACAVILLE, CA 95688**
0.023 mi.
124 ft. **Site 1 of 5 in cluster B**

Relative:
Higher

Actual:
123 ft.

EMI:

Year:	2007
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1304827863093445749
Reactive Organic Gases Tons/Yr:	.13
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:	2008
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.1304827863093445749
Reactive Organic Gases Tons/Yr:	.13
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

MIDWAY FOODS, INC. DBA OATES COUNTRY STORE (Continued) **U000072198**

Year:	2009
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.100371374084111
Reactive Organic Gases Tons/Yr:	0.10000000000000001
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:	2010
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.120445648900933
Reactive Organic Gases Tons/Yr:	0.12
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:	2011
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.1204456489
Reactive Organic Gases Tons/Yr:	0.12
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:	2012
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541

MIDWAY FOODS, INC. DBA OATES COUNTRY STORE (Continued) **U000072198**

Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.090334236676
Reactive Organic Gases Tons/Yr:	0.09
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:	2013
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541
Air District Name:	YOLO/SOLANO 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:	0.1
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:	2014
County Code:	48
Air Basin:	SV
Facility ID:	5118
Air District Name:	YS
SIC Code:	5541
Air District Name:	YOLO/SOLANO 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:	0.1
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

NOTIFY 65:

Date Reported:	Not reported
Staff Initials:	Not reported
Board File Number:	Not reported
Facility Type:	Not reported
Discharge Date:	Not reported
Issue Date:	Not reported
Incident Description:	Not reported

B10 North < 1/8 0.023 mi. 124 ft. | **OATES COUNTRY STORE**
4819 MIDWAY RD
VACAVILLE, CA 95688 | **UST**
SWEEPS UST
HIST UST | **U001614078**
N/A

Site 2 of 5 in cluster B

Relative: Higher

Actual: 123 ft.

UST:

Facility ID:	80047
Permitting Agency:	SOLANO COUNTY
Latitude:	38.41821385
Longitude:	-121.947925

Facility ID:	48-000-080047
Permitting Agency:	Solano County Environmental Health
Latitude:	38.41744
Longitude:	-121.94773

SOLANO CO. UST:

Facility Id:	80047
Facility Status:	Inactive
Decode for Facility Status:	Closed
Facility Phone:	707-446-7371

Inventory Number:	1
Inventory Type:	Underground Storage Tank (1) LEADED
Inventory Description:	Not reported
Permit Expire/Last Service:	PLAN CHECK CONSULTATION 03/31/92
Last Service Date:	04/11/16
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

Inventory Number:	2
Inventory Type:	Underground Storage Tank (1) REGULAR UNLEADED
Inventory Description:	Not reported
Permit Expire/Last Service:	03/31/92
Last Service Date:	Not reported
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

Inventory Number:	3
Inventory Type:	Underground Storage Tank (1) REGULAR UNLEADED
Inventory Description:	Not reported
Permit Expire/Last Service:	03/31/92
Last Service Date:	Not reported
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

Inventory Number:	4
Inventory Type:	Gas Station - Retail (111) DIESEL
Inventory Description:	Not reported
Permit Expire/Last Service:	ROUTINE - INITIAL (INVENTORIED) 03/31/18, 03/31/18
Last Service Date:	02/10/16
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

OATES COUNTRY STORE (Continued) **U001614078**

Inventory Number: 5
Inventory Type: Gas Station - Retail (111) REGULAR UNLEADED
Inventory Description: Not reported
Permit Expire/Last Service: ROUTINE - INITIAL (INVENTORIED) 03/31/18, 03/31/18
Last Service Date: 02/10/16
District: SUP-DIST NO 3031
Inspector: Chris S Ambrose

Inventory Number: 6
Inventory Type: Gas Station - Retail (111) REGULAR UNLEADED
Inventory Description: Not reported
Permit Expire/Last Service: ROUTINE - INITIAL (INVENTORIED) 03/31/18, 03/31/18
Last Service Date: 02/10/16
District: SUP-DIST NO 3031
Inspector: Chris S Ambrose

SWEEPS UST:
Status: Active
Comp Number: 80047
Number: 9
Board Of Equalization: 44-673413
Referral Date: 10-06-93
Action Date: 10-06-93
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 48-000-080047-000004
Tank Status: A
Capacity: 3000
Active Date: 10-06-93
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 3

Status: Active
Comp Number: 80047
Number: 9
Board Of Equalization: 44-673413
Referral Date: 10-06-93
Action Date: 10-06-93
Created Date: 02-29-88
Owner Tank Id: Not reported
SWRCB Tank Id: 48-000-080047-000005
Tank Status: A
Capacity: 6000
Active Date: 10-06-93
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 80047
Number: 9
Board Of Equalization: 44-673413
Referral Date: 10-06-93

OATES COUNTRY STORE (Continued) **U001614078**

Action Date:	10-06-93
Created Date:	02-29-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	48-000-080047-000006
Tank Status:	A
Capacity:	6000
Active Date:	10-06-93
Tank Use:	M.V. FUEL
STG:	P
Content:	PRM UNLEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	80047
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:	48-000-080047-000001
Tank Status:	Not reported
Capacity:	10000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	LEADED
Number Of Tanks:	3

Status:	Not reported
Comp Number:	80047
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:	48-000-080047-000002
Tank Status:	Not reported
Capacity:	10000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

Status:	Not reported
Comp Number:	80047
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:	48-000-080047-000003
Tank Status:	Not reported
Capacity:	10000

OATES COUNTRY STORE (Continued) **U001614078**

Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	Not reported

HIST UST:

File Number:	00021311
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/00021311.pdf
Region:	STATE
Facility ID:	00000009104
Facility Type:	Gas Station
Other Type:	Not reported
Contact Name:	RICHARD W OATES SR
Telephone:	7074467371
Owner Name:	MIDWAY FOODS INC
Owner Address:	4819 MIDWAY RD
Owner City,St,Zip:	VACAVILLE, CA 95668
Total Tanks:	0003

Tank Num:	001
Container Num:	I
Year Installed:	1978
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	3/8
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	III
Year Installed:	1978
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	PREMIUM
Container Construction Thickness:	3/8
Leak Detection:	Stock Inventor

Tank Num:	003
Container Num:	II
Year Installed:	1978
Tank Capacity:	00010000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	3/8
Leak Detection:	Stock Inventor

Click here for Geo Tracker PDF:

B11 **OATS COUNTRY STORE** **LUST** **S104163554**
North **4819 MIDWAY** **HIST CORTESE** **N/A**
< 1/8 **VACAVILLE, CA 95688**
0.023 mi.
124 ft. **Site 3 of 5 in cluster B**

Relative:
Higher

Actual:
123 ft.

LUST:

Region:	STATE
Global Id:	T0609500352
Latitude:	38.4169311
Longitude:	-121.9469423
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	11/07/1997
Lead Agency:	SOLANO COUNTY LOP
Case Worker:	MCK
Local Agency:	SOLANO COUNTY LOP
RB Case Number:	480089
LOC Case Number:	80047
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0609500352
Contact Type:	Local Agency Caseworker
Contact Name:	MISTY C. KALTREIDER
Organization Name:	SOLANO COUNTY LOP
Address:	675 TEXAS STREET, SUITE 5500
City:	FAIRFIELD
Email:	mkaltreider@solanocounty.com
Phone Number:	7077846765

Status History:

Global Id:	T0609500352
Status:	Completed - Case Closed
Status Date:	11/07/1997
Global Id:	T0609500352
Status:	Open - Case Begin Date
Status Date:	02/15/1989
Global Id:	T0609500352
Status:	Open - Site Assessment
Status Date:	03/13/1989

Regulatory Activities:

Global Id:	T0609500352
Action Type:	Other
Date:	02/15/1989
Action:	Leak Reported

LUST REG 5:

Region:	5

OATS COUNTRY STORE (Continued) **S104163554**

Status: Case Closed
Case Number: 480089
Case Type: Soil only
Substance: GASOLINE
Staff Initials: JIM
Lead Agency: Local
Program: LUST
MTBE Code: N/A

HIST CORTESE:
Region: CORTESE
Facility County Code: 48
Reg By: LTNKA
Reg Id: 480089

B12 **OATES COUNTRY STORE** **CA FID UST** **S101628047**
North **4819 MIDWAY RD** **N/A**
< 1/8 **VACAVILLE, CA 95688**
0.023 mi.
124 ft. **Site 4 of 5 in cluster B**

Relative:
Higher

Actual:
123 ft.

CA FID UST:
Facility ID: 48000245
Regulated By: UTNKA
Regulated ID: 00009104
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: 7074467371
Mail To: Not reported
Mailing Address: 4819 MIDWAY RD
Mailing Address 2: Not reported
Mailing City,St,Zip: VACAVILLE 95688
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

B13 **MIDWAY FOODS INC** **EDR Hist Auto** **1020736088**
North **4819 MIDWAY RD** **N/A**
< 1/8 **VACAVILLE, CA 95688**
0.023 mi.
124 ft. **Site 5 of 5 in cluster B**

Relative:
Higher

Actual:
123 ft.

EDR Hist Auto

Year:	Name:	Type:
1980	MIDWAY FOODS INC	Miscellaneous General Merchandise
1982	MIDWAY FOODS INC	Miscellaneous General Merchandise
1983	MIDWAY FOODS INC	Miscellaneous General Merchandise
1985	MIDWAY FOODS INC	Miscellaneous General Merchandise
1986	MIDWAY FOODS INC	Miscellaneous General Merchandise
1987	MIDWAY FOODS INC	Miscellaneous General Merchandise
1988	MIDWAY FOODS INC	Miscellaneous General Merchandise

MIDWAY FOODS INC (Continued) **1020736088**

1989	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1990	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1991	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1992	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1993	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1994	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1995	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1996	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1997	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1998	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
1999	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2000	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2001	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2002	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2003	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2004	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2005	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2006	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2007	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2008	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2009	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2010	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2011	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2012	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2013	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC
2014	MIDWAY FOODS INC	Miscellaneous General Merchandise Stores, NEC

C14 **LIQUID CARBONICS** **SWEEPS UST** **1000598302**
SW **871 EUBANKS DR** **CA FID UST** **N/A**
< 1/8 **VACAVILLE, CA 95688** **WDS**
0.077 mi.
405 ft. **Site 1 of 2 in cluster C**

Relative:
Higher

Actual:
114 ft.

SWEEPS UST:

Status:	Active
Comp Number:	50073
Number:	9
Board Of Equalization:	Not reported
Referral Date:	08-30-93
Action Date:	08-30-93
Created Date:	01-23-92
Owner Tank Id:	Not reported
SWRCB Tank Id:	48-000-050073-000001
Tank Status:	A
Capacity:	20009
Active Date:	08-30-93
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	1

CA FID UST:

Facility ID:	48000750
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported

LIQUID CARBONICS (Continued) **1000598302**

Facility Phone:	7074475753
Mail To:	Not reported
Mailing Address:	871 EUBANKS DR
Mailing Address 2:	Not reported
Mailing City,St,Zip:	VACAVILLE 95688
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

WDS:

Facility ID:	5S 48I014768
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:	0
Facility Telephone:	7074475753
Facility Contact:	RAPHAEL COURNOYER
Agency Name:	MESSER GRIESHEIM IND
Agency Address:	871 Eubanks Dr
Agency City,St,Zip:	Vacaville 956889360
Agency Contact:	DETRIC MOSLEY
Agency Telephone:	7074475753
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

LIQUID CARBONICS (Continued) **1000598302**

dischargers having waste storage systems with land disposal such as dairy waste ponds.

C15
SW
< 1/8
0.077 mi.
405 ft.

MG INDUSTRIES
871 EUBANKS DR
VACAVILLE, CA 95688

UST **U003989360**
N/A

Site 2 of 2 in cluster C

Relative:
Higher

Actual:
114 ft.

UST:

Facility ID:	50073
Permitting Agency:	SOLANO COUNTY
Latitude:	38.40952
Longitude:	-121.951839

SOLANO CO. UST:

Facility Id:	50073
Facility Status:	Inactive
Decode for Facility Status:	Closed
Facility Phone:	707-447-5753
Inventory Number:	1
Inventory Type:	Permanent Closure (192) Removed 11/30/06
Inventory Description:	Not reported
Permit Expire/Last Service:	LETTER/REPORT REVIEW 10/31/08, 10/31/08
Last Service Date:	02/08/07
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

16
SW
< 1/8
0.124 mi.
653 ft.

MATHESON TRI-GAS, INC.
871 EUBANKS
VACAVILLE, CA 95688

AST **A100422230**
N/A

Relative:
Higher

Actual:
117 ft.

AST:

Certified Unified Program Agencies:	Not reported
Owner:	Matheson Tri-Gas Inc.
Total Gallons:	Not reported
CERSID:	10127437
Facility ID:	48-000-050073
Business Name:	Matheson Tri-Gas, Inc.
Phone:	707-447-5753
Fax:	707-447-5516
Mailing Address:	871 Eubanks Dr.
Mailing Address City:	Vacaville
Mailing Address State:	CA
Mailing Address Zip Code:	95688
Operator Name:	Matheson Tri-Gas Inc.
Operator Phone:	707-447-5753
Owner Phone:	800-828-4313
Owner Mail Address:	150 Allen Road, Ste. 302
Owner State:	NJ
Owner Zip Code:	7920
Owner Country:	United States
Property Owner Name:	Not reported

MATHESON TRI-GAS, INC. (Continued) **A100422230**

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:	CAL000290883

D17 **FIRE STATION, DIXON DISTRICT** **CA FID UST** **S101595041**
NNW **7337 PADDON RD** **N/A**
1/8-1/4 **VACAVILLE, CA 95688**
0.193 mi.
1017 ft. **Site 1 of 2 in cluster D**

Relative:
Higher

Actual:
121 ft.

CA FID UST:

Facility ID:	48000775
Regulated By:	UTNKI
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	Not reported
Mail To:	Not reported
Mailing Address:	600 E A ST
Mailing Address 2:	Not reported
Mailing City,St,Zip:	VACAVILLE 95688
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Inactive

D18 **FIRE STATION DIXON DISTRICT** **UST** **U004186728**
NNW **7337 PADDON RD** **N/A**
1/8-1/4 **VACAVILLE, CA 95688**
0.193 mi.
1017 ft. **Site 2 of 2 in cluster D**

Relative:
Higher

Actual:
121 ft.

SOLANO CO. UST:

Facility Id:	80155
Facility Status:	Inactive
Decode for Facility Status:	Closed
Facility Phone:	Not reported
Inventory Number:	1
Inventory Type:	Underground Storage Tank (1)
Inventory Description:	Not reported
Permit Expire/Last Service:	Not reported
Last Service Date:	Not reported
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

19
South
1/4-1/2
0.259 mi.
1370 ft.

Relative:
Higher

Actual:
109 ft.

INTERNATIONAL HOME FOODS INC
500 CROCKER DRIVE
VACAVILLE, CA 95688

RCRA-SQG **1000904817**
LUST **CAD009708728**
SWEEPS UST
CHMIRS
EMI
HIST CORTESE
NPDES
WDS

RCRA-SQG:

Date form received by agency:	10/12/2000
Facility name:	INTERNATIONAL HOME FOODS INC
Site name:	INTERNATIONAL HOME FOODS
Facility address:	500 CROCKER DRIVE VACAVILLE, CA 95688
EPA ID:	CAD009708728
Contact:	ROBERT MILLER
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	(707) 448-8411
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

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

Historical Generators:

Date form received by agency:	03/04/1999
Site name:	INTERNATIONAL HOME FOODS, INC.
Classification:	Large Quantity Generator
Date form received by agency:	12/19/1996
Site name:	INTERNATIONAL HOME FOODS INC
Classification:	Small Quantity Generator
Violation Status:	No violations found

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

LUST:

Region:	STATE
Global Id:	T0609500397
Latitude:	38.4009135
Longitude:	-121.9485881
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	03/10/1992
Lead Agency:	SOLANO COUNTY LOP
Case Worker:	MCK
Local Agency:	SOLANO COUNTY LOP
RB Case Number:	480152
LOC Case Number:	50001
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0609500397
Contact Type:	Local Agency Caseworker
Contact Name:	MISTY C. KALTREIDER
Organization Name:	SOLANO COUNTY LOP
Address:	675 TEXAS STREET, SUITE 5500
City:	FAIRFIELD
Email:	mkaltreider@solanocounty.com
Phone Number:	7077846765

Status History:

Global Id:	T0609500397
Status:	Completed - Case Closed
Status Date:	03/10/1992
Global Id:	T0609500397
Status:	Open - Case Begin Date
Status Date:	05/05/1988

Regulatory Activities:

Global Id:	T0609500397
Action Type:	Other
Date:	05/06/1988
Action:	Leak Discovery
Global Id:	T0609500397
Action Type:	Other
Date:	05/05/1988
Action:	Leak Stopped
Global Id:	T0609500397
Action Type:	Other
Date:	05/11/1988
Action:	Leak Reported

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

LUST REG 5:

Region:	5
Status:	Case Closed
Case Number:	480152
Case Type:	Soil only
Substance:	UNLEAD GASOLINE
Staff Initials:	JIM
Lead Agency:	Local
Program:	LUST
MTBE Code:	N/A

SWEEPS UST:

Status:	Not reported
Comp Number:	50001
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:	48-000-050001-000001
Tank Status:	Not reported
Capacity:	550
Active Date:	Not reported
Tank Use:	UNKNOWN
STG:	PRODUCT
Content:	Not reported
Number Of Tanks:	1

CHMIRS:

OES Incident Number:	1-7638
OES notification:	12/29/2011
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

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
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:	1030
Year:	2011
Agency:	Mariani Packing Company
Incident Date:	12/28/2011
Admin Agency:	Solano County Environmental Management
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Hydraulic Oil
Quantity Released:	10
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#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:	Per RP, release occurred due to a hose that broke. The release occurred to the processing floor and was contained; it did not enter a drain. Not reported
OES Incident Number:	5-5317
OES notification:	09/13/2005
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

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

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:	2005
Agency:	Mariani Packing Co
Incident Date:	9/13/200512:00:00 AM
Admin Agency:	Solano County Environmental Management
Amount:	Not reported
Contained:	Yes
Site Type:	Industrial Plant
E Date:	Not reported
Substance:	Petroleum Ether
Gallons:	0.000000
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:	Substance was released when a technician dropped the container. Clean-up is complete.
OES Incident Number:	1-0958
OES notification:	02/17/2011

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

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:	No
Waterway:	Not reported
Spill Site:	Merchant/Business
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	2000
Year:	2011
Agency:	Mariani Packing Co
Incident Date:	2/15/2011
Admin Agency:	Solano County Environmental Management
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Oil - Hydraulic, food grade
Quantity Released:	20
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

#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:	Hose broke during the manufacturing process causing release, material flowed onto an epoxy floor, RP handled the containment and clean up.
OES Incident Number:	1-1468
OES notification:	03/11/2011
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:	No
Waterway:	Not reported
Spill Site:	Merchant/Business
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1830
Year:	2011
Agency:	Mariani Packing Co
Incident Date:	3/10/2011
Admin Agency:	Not reported
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

Substance:	Oil - Hydraulic Fluid
Quantity Released:	5
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#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:	Manufacturing machine hydraulic line ruptured causing release, material flowed onto equipment and epoxy flooring, RP handled containment and clean up.

EMI:

Year:	1995
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2033
Air District Name:	YOLO/SOLANO 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:	4
NOX - Oxides of Nitrogen Tons/Yr:	18
SOX - Oxides of Sulphur Tons/Yr:	57
Particulate Matter Tons/Yr:	2
Part. Matter 10 Micrometers and Smllr Tons/Yr:	2

Year:	1996
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO 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:	1
Carbon Monoxide Emissions Tons/Yr:	5
NOX - Oxides of Nitrogen Tons/Yr:	47
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	2
Part. Matter 10 Micrometers and Smllr Tons/Yr:	2

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

Year:	1997
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2033
Air District Name:	YOLO/SOLANO 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:	4
NOX - Oxides of Nitrogen Tons/Yr:	18
SOX - Oxides of Sulphur Tons/Yr:	57
Particulate Matter Tons/Yr:	2
Part. Matter 10 Micrometers and Smllr Tons/Yr:	2

Year:	1998
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO 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:	36
NOX - Oxides of Nitrogen Tons/Yr:	11
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	2
Part. Matter 10 Micrometers and Smllr Tons/Yr:	2

Year:	2002
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO 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:	2
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:	2003
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

Air District Name:	YOLO/SOLANO 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:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0.071056371
Reactive Organic Gases Tons/Yr:	0.03
Carbon Monoxide Emissions Tons/Yr:	0.18
NOX - Oxides of Nitrogen Tons/Yr:	0.12
SOX - Oxides of Sulphur Tons/Yr:	0.02
Particulate Matter Tons/Yr:	0.02
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.02

Year:	2005
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0710563713879677877
Reactive Organic Gases Tons/Yr:	.03
Carbon Monoxide Emissions Tons/Yr:	.18
NOX - Oxides of Nitrogen Tons/Yr:	.12
SOX - Oxides of Sulphur Tons/Yr:	.02
Particulate Matter Tons/Yr:	.02
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.02

Year:	2006
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	.0710563713879677877
Reactive Organic Gases Tons/Yr:	.03
Carbon Monoxide Emissions Tons/Yr:	.18

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

NOX - Oxides of Nitrogen Tons/Yr:	.12
SOX - Oxides of Sulphur Tons/Yr:	.02
Particulate Matter Tons/Yr:	.02
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.02

Year:	2007
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.124891706873874773
Reactive Organic Gases Tons/Yr:	.48
Carbon Monoxide Emissions Tons/Yr:	3.09
NOX - Oxides of Nitrogen Tons/Yr:	1.05
SOX - Oxides of Sulphur Tons/Yr:	.03
Particulate Matter Tons/Yr:	.3326315789473684210
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.29

Year:	2008
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.124891706873874773
Reactive Organic Gases Tons/Yr:	.48
Carbon Monoxide Emissions Tons/Yr:	3.09
NOX - Oxides of Nitrogen Tons/Yr:	1.05
SOX - Oxides of Sulphur Tons/Yr:	.03
Particulate Matter Tons/Yr:	.3326315789473684210
Part. Matter 10 Micrometers and Smllr Tons/Yr:	.29

Year:	2009
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.12489170687387
Reactive Organic Gases Tons/Yr:	0.47999999999999998
Carbon Monoxide Emissions Tons/Yr:	3.0899999999999999
NOX - Oxides of Nitrogen Tons/Yr:	1.05
SOX - Oxides of Sulphur Tons/Yr:	2.9999999999999999E-2
Particulate Matter Tons/Yr:	0.332631578947368
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.28999999999999998

Year:	2010

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.0301498783565799
Reactive Organic Gases Tons/Yr:	0.44
Carbon Monoxide Emissions Tons/Yr:	2.8399999999999999
NOX - Oxides of Nitrogen Tons/Yr:	0.95999999999999996
SOX - Oxides of Sulphur Tons/Yr:	4.0000000000000001E-2
Particulate Matter Tons/Yr:	0.31263157894736798
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.27000000000000002

Year:	2011
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.0301498784
Reactive Organic Gases Tons/Yr:	0.44
Carbon Monoxide Emissions Tons/Yr:	2.84
NOX - Oxides of Nitrogen Tons/Yr:	0.96
SOX - Oxides of Sulphur Tons/Yr:	0.04
Particulate Matter Tons/Yr:	0.31263157895
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.27

Year:	2012
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.0301498784
Reactive Organic Gases Tons/Yr:	0.44
Carbon Monoxide Emissions Tons/Yr:	2.84
NOX - Oxides of Nitrogen Tons/Yr:	0.96
SOX - Oxides of Sulphur Tons/Yr:	0.04
Particulate Matter Tons/Yr:	0.31263157895
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.27

Year:	2013
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.4371779695
Reactive Organic Gases Tons/Yr:	0.77
Carbon Monoxide Emissions Tons/Yr:	4.64
NOX - Oxides of Nitrogen Tons/Yr:	3.92
SOX - Oxides of Sulphur Tons/Yr:	0.62
Particulate Matter Tons/Yr:	1.0400905953
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.98

Year:	2014
County Code:	48
Air Basin:	SV
Facility ID:	5008
Air District Name:	YS
SIC Code:	2032
Air District Name:	YOLO/SOLANO AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	1.3442725888
Reactive Organic Gases Tons/Yr:	0.77
Carbon Monoxide Emissions Tons/Yr:	4.64
NOX - Oxides of Nitrogen Tons/Yr:	3.92
SOX - Oxides of Sulphur Tons/Yr:	0.62
Particulate Matter Tons/Yr:	1.0400905953
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.98

HIST CORTESE:

Region:	CORTESE
Facility County Code:	48
Reg By:	LTNKA
Reg Id:	480152

NPDES:

Npdes Number:	CAS000001
Facility Status:	Active
Agency Id:	0
Region:	5S
Regulatory Measure Id:	202051
Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	5S48I017004
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	12/27/2001
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Mariani Packaging Co Inc
Discharge Address:	500 Crocker Dr
Discharge City:	Vacaville
Discharge State:	California
Discharge Zip:	95688
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

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
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

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

Region:	5S
Regulatory Measure Id:	202051
Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	5S48I017004
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:	5/9/2008
PROCESSED DATE:	12/27/2001
STATUS CODE NAME:	Active
STATUS DATE:	12/27/2001
PLACE SIZE:	50
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Hanna McLennan
FACILITY CONTACT TITLE:	Food Safety/Regulatory Manager
FACILITY CONTACT PHONE:	707-452-2800
FACILITY CONTACT PHONE EXT:	2837
FACILITY CONTACT EMAIL:	hmclennan@mariani.com
OPERATOR NAME:	Mariani Packaging Co Inc
OPERATOR ADDRESS:	500 Crocker Dr
OPERATOR CITY:	Vacaville
OPERATOR STATE:	California
OPERATOR ZIP:	95688
OPERATOR CONTACT NAME:	Mark Mariani
OPERATOR CONTACT TITLE:	CEO
OPERATOR CONTACT PHONE:	707-452-2800
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	mmariani@mariani.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:	707-452-2800
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

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

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:	Gibson Canyon Creek
CERTIFIER NAME:	Mark Mariani
CERTIFIER TITLE:	CEO
CERTIFICATION DATE:	25-JUN-15
PRIMARY SIC:	2034-Dried and Dehydrated Fruits, Vegetables, and Soup Mixes
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

WDS:

Facility ID:	5S 48I017004
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:	0
Facility Telephone:	7074522800
Facility Contact:	DAVID WEISS
Agency Name:	MARIANI PACKAGING CO INC
Agency Address:	500 Crocker Dr
Agency City,St,Zip:	Vacaville 956888706
Agency Contact:	DAVID WEISS
Agency Telephone:	7074522800
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

INTERNATIONAL HOME FOODS INC (Continued) **1000904817**

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.

E20
SSW
1/4-1/2
0.457 mi.
2414 ft.

PACIFIC SPECTRUM GLASS
909 ALDRIDGE
VACAVILLE, CA 95688

LUST **S104493318**
SWEEPS UST **N/A**
HIST CORTESE

Site 1 of 2 in cluster E

Relative:
Higher

Actual:
119 ft.

LUST:

Region:	STATE
Global Id:	T0609500407
Latitude:	38.401741
Longitude:	-121.953674
Case Type:	LUST Cleanup Site
Status:	Completed - Case Closed
Status Date:	06/02/1998
Lead Agency:	SOLANO COUNTY LOP
Case Worker:	MCK
Local Agency:	SOLANO COUNTY LOP
RB Case Number:	480167
LOC Case Number:	50022
File Location:	Not reported
Potential Media Affect:	Soil
Potential Contaminants of Concern:	Diesel
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

Contact:

Global Id:	T0609500407
Contact Type:	Local Agency Caseworker
Contact Name:	MISTY C. KALTREIDER
Organization Name:	SOLANO COUNTY LOP
Address:	675 TEXAS STREET, SUITE 5500
City:	FAIRFIELD
Email:	mkaltreider@solanocounty.com
Phone Number:	7077846765

Status History:

Global Id:	T0609500407
Status:	Completed - Case Closed
Status Date:	06/02/1998
Global Id:	T0609500407
Status:	Open - Case Begin Date
Status Date:	06/02/1992
Global Id:	T0609500407
Status:	Open - Remediation
Status Date:	05/10/1994
Global Id:	T0609500407
Status:	Open - Site Assessment
Status Date:	02/22/1993

PACIFIC SPECTRUM GLASS (Continued) **S104493318**

Global Id: T0609500407
Status: Open - Site Assessment
Status Date: 05/12/1993

Regulatory Activities:
Global Id: T0609500407
Action Type: Other
Date: 06/02/1992
Action: Leak Discovery

Global Id: T0609500407
Action Type: Other
Date: 02/16/1993
Action: Leak Reported

LUST REG 5:
Region: 5
Status: Case Closed
Case Number: 480167
Case Type: Soil only
Substance: DIESEL
Staff Initials: JIM
Lead Agency: Local
Program: LUST
MTBE Code: N/A

SWEEPS UST:
Status: Not reported
Comp Number: 50022
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: 48-000-050022-000001
Tank Status: Not reported
Capacity: 10000
Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: REG UNLEADED
Number Of Tanks: 2

Status: Not reported
Comp Number: 50022
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: 48-000-050022-000002
Tank Status: Not reported
Capacity: 10000

PACIFIC SPECTRUM GLASS (Continued) **S104493318**

Active Date: Not reported
Tank Use: M.V. FUEL
STG: PRODUCT
Content: DIESEL
Number Of Tanks: Not reported

HIST CORTESE:
Region: CORTESE
Facility County Code: 48
Reg By: LTNKA
Reg Id: 480167

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21 East 1/4-1/2 0.467 mi. 2466 ft.

VACAVILLE ELEMENTARY SCHOOL #1 **ENVIROSTOR SCH** **S112057178 N/A**
WEST OF LEISURE TOWN RD./SOUTH OF MIDWAY RD.
VACAVILLE, CA 95688

Relative: Lower

Actual: 99 ft.

ENVIROSTOR:
Facility ID: 60001623
Status: No Further Action
Status Date: 02/08/2013
Site Code: 104700
Site Type: School Investigation
Site Type Detailed: School
Acres: 11
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Juan Koponen
Division Branch: Northern California Schools & Santa Susana
Assembly: 04
Senate: 03
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 38.41077
Longitude: -121.9374
APN: 0106-240-29
Past Use: AGRICULTURAL - ROW CROPS
Potential COC: Under Investigation Arsenic Chlordane DDD DDE DDT Endrin Toxaphene Dieldrin
Confirmed COC: Arsenic 30004-NO 30006-NO 30007-NO 30008-NO 30010-NO 30207-NO 31001-NO 30023-NO
Potential Description: NMA, SOIL
Alias Name: New Elementary School #1
Alias Type: Alternate Name
Alias Name: 0106-240-29
Alias Type: APN
Alias Name: 104700
Alias Type: Project Code (Site Code)
Alias Name: 60001623
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE

VACAVILLE ELEMENTARY SCHOOL #1 (Continued) **S112057178**

Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 02/21/2012
Comments: Finalized EOA with UC signature sent back to District.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 02/08/2013
Comments: CRU memo completed by PM and forwarded to CRU.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 04/24/2012
Comments: PM approved PEA workplan for Vacaville ES #1 site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 02/07/2013
Comments: PEA approved by DTSC on 2/7/2013 with NFA determination.

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

SCH:

Facility ID: 60001623
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 11
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported
Supervisor: Juan Koponen
Division Branch: Northern California Schools & Santa Susana
Site Code: 104700
Assembly: 04
Senate: 03
Special Program Status: Not reported
Status: No Further Action
Status Date: 02/08/2013
Restricted Use: NO
Funding: School District
Latitude: 38.41077
Longitude: -121.9374

VACAVILLE ELEMENTARY SCHOOL #1 (Continued) **S112057178**

APN:	0106-240-29
Past Use:	AGRICULTURAL - ROW CROPS
Potential COC:	Under Investigation, Arsenic, Chlordane, DDD, DDE, DDT, Endrin, Toxaphene, Dieldrin
Confirmed COC:	Arsenic, 30004-NO, 30006-NO, 30007-NO, 30008-NO, 30010-NO, 30207-NO, 31001-NO, 30023-NO
Potential Description:	NMA, SOIL
Alias Name:	New Elementary School #1
Alias Type:	Alternate Name
Alias Name:	0106-240-29
Alias Type:	APN
Alias Name:	104700
Alias Type:	Project Code (Site Code)
Alias Name:	60001623
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	02/21/2012
Comments:	Finalized EOA with UC signature sent back to District.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	02/08/2013
Comments:	CRU memo completed by PM and forwarded to CRU.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	04/24/2012
Comments:	PM approved PEA workplan for Vacaville ES #1 site.

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Report
Completed Date:	02/07/2013
Comments:	PEA approved by DTSC on 2/7/2013 with NFA determination.

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

E22 SSW 1/4-1/2 0.498 mi. 2627 ft. | **ALL WEATHER INSULATED PANELS**
929 ALDRIDGE RD
VACAVILLE, CA 95688

Site 2 of 2 in cluster E

LUST UST EMI WDS | **U003641455 N/A**

Relative: Higher

Actual: 119 ft.

SOLANO CO. LUST:

Region:	SOLANO
Facility ID:	50022
Facility Status:	I
Facility Status Desc:	Inactive
Facility Phone:	707-359-2280
Program:	29S
Inventory Number:	1
Inventory Type:	LOP - Closed Site (128)
Inventory Description:	Not reported
Last service/permit exp:	ADMINISTRATION SUPPORT
Last service date:	12/11/2002

SOLANO CO. UST:

Facility Id:	50022
Facility Status:	Inactive
Decode for Facility Status:	Closed
Facility Phone:	707-359-2280
Inventory Number:	1
Inventory Type:	Underground Storage Tank (1)
Inventory Description:	Not reported
Permit Expire/Last Service:	03/31/92
Last Service Date:	Not reported
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose
Inventory Number:	2
Inventory Type:	Underground Storage Tank (1)
Inventory Description:	Not reported
Permit Expire/Last Service:	03/31/92
Last Service Date:	Not reported
District:	SUP-DIST NO 3031
Inspector:	Chris S Ambrose

EMI:

Year:	2013
County Code:	48
Air Basin:	SV
Facility ID:	5525
Air District Name:	YS
SIC Code:	3448
Air District Name:	YOLO/SOLANO 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:	0.085714285714

ALL WEATHER INSULATED PANELS (Continued) **U003641455**

Part. Matter 10 Micrometers and Smllr Tons/Yr:0.06

Year:	2014
County Code:	48
Air Basin:	SV
Facility ID:	5525
Air District Name:	YS
SIC Code:	3448
Air District Name:	YOLO/SOLANO 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:	0.085714285714
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0.06

WDS:

Facility ID:	5S 48I018235
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:	0
Facility Telephone:	7074475014
Facility Contact:	James Morrison
Agency Name:	SHAW PIPING ENGINEERING & HANG
Agency Address:	1040 Jack Wells Blvd
Agency City,St,Zip:	Shreveport 711077039
Agency Contact:	Stan Kukulka
Agency Telephone:	2259322500
Agency Type:	?
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

ALL WEATHER INSULATED PANELS (Continued) **U003641455**

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.

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23 SSW 1/2-1 0.721 mi. 3806 ft.

SPRIG CIRCUITS, INC.
765-A EUBANKS DRIVE (UNITS A,
VACAVILLE, CA 95688

RCRA-LQG **1000252519**
ENVIROSTOR **CAD980881098**

Relative: Higher

Actual: 115 ft.

RCRA-LQG:

Date form received by agency:	05/28/2010
Facility name:	SPRIG CIRCUITS, INC.
Facility address:	765-A EUBANKS DRIVE (UNITS A, B, & B-1) VACAVILLE, CA 95688
EPA ID:	CAD980881098
Mailing address:	765-A EUBANKS DR. VACAVILLE, CA 95688
Contact:	TYLER CHRISTENSEN
Contact address:	765-A EUBANKS DR. VACAVILLE, CA 95688
Contact country:	US
Contact telephone:	(707) 447-7744
Contact email:	TYLER@SPRIGCIRCUITS.COIM
EPA Region:	09
Land type:	Private
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

Owner/Operator Summary:

Owner/operator name:	SPRIG CIRCUITS, INC.
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/01/1983
Owner/Op end date:	Not reported

SPRIG CIRCUITS, INC. (Continued) **1000252519**

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
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: KLP PROPERTIES
Owner/operator address: 4432 PIEDMONT AVENUE
OAKLAND, CA 94611
Owner/operator country: US
Owner/operator telephone: (510) 654-4257
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/20/2005
Owner/Op end date: Not reported

Owner/operator name: SPRIG CIRCUITS INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: (415) 555-1212
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

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008

SPRIG CIRCUITS, INC. (Continued) **1000252519**

. Waste name: LEAD

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Historical Generators:
Date form received by agency: 02/11/2008
Site name: SPRIG CIRCUITS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 02/28/2006
Site name: SPRIG CIRCUITS, INC.
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008

SPRIG CIRCUITS, INC. (Continued) **1000252519**

. Waste name: LEAD

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 02/26/2004
Site name: SPRIG CIRCUITS, INC.
Classification: Large Quantity Generator

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 03/04/2002
Site name: SPRIG CIRCUITS INC
Classification: Large Quantity Generator

Date form received by agency: 10/12/2000
Site name: SPRIG CIRCUITS, INC.
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Site name: SPRIG CIRCUITS, INC.
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: SPRIG CIRCUITS INC
Classification: Large Quantity Generator

Date form received by agency: 02/28/1996
Site name: SPRIG CIRCUITS, INC.
Classification: Large Quantity Generator

Date form received by agency: 03/30/1994

SPRIG CIRCUITS, INC. (Continued) **1000252519**

Site name: SPRING CIRCUITS INC
Classification: Large Quantity Generator

Date form received by agency: 02/25/1992
Site name: SPRIG CIRCUITS INC
Classification: Large Quantity Generator

Date form received by agency: 12/20/1983
Site name: SPRIG CIRCUITS INC
Classification: Large Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 11/17/2010
Date achieved compliance: 03/22/2011
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 08/15/1988
Date achieved compliance: 11/19/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/15/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 08/15/1988
Date achieved compliance: 11/19/1992
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 08/21/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 17000
Final penalty amount: 17000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 08/15/1988

SPRIG CIRCUITS, INC. (Continued) **1000252519**

Date achieved compliance: 11/19/1989
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 08/21/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 17000
Final penalty amount: 17000
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 08/15/1988
Date achieved compliance: 11/19/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/15/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 05/19/1988
Date achieved compliance: 07/27/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/30/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 11/17/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - Pre-transport
Date achieved compliance: 03/22/2011
Evaluation lead agency: EPA

Evaluation date: 08/15/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 11/19/1992
Evaluation lead agency: State

Evaluation date: 08/15/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 11/19/1989
Evaluation lead agency: State

SPRIG CIRCUITS, INC. (Continued) **1000252519**

Evaluation date: 05/19/1988
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: LDR - General
Date achieved compliance: 07/27/1989
Evaluation lead agency: State

ENVIROSTOR:
Facility ID: 71002695
Status: Inactive - Needs Evaluation
Status Date: Not reported
Site Code: Not reported
Site Type: Tiered Permit
Site Type Detailed: Tiered Permit
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Not reported
Division Branch: Cleanup Sacramento
Assembly: Not reported
Senate: Not reported
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 0
Longitude: 0
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAD980881098
Alias Type: EPA Identification Number
Alias Name: 110000886872
Alias Type: EPA (FRS #)
Alias Name: 71002695
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
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

24 SE 1/2-1 0.956 mi. 5049 ft. | **NORTH VILLAGE ELEMENTARY**
VACA VALLEY PARKWAY/LEISURE TOWN ROAD
VACAVILLE, CA 95688 | **ENVIROSTOR SCH** | **S118756979 N/A**

Relative: Lower

Actual: 93 ft.

ENVIROSTOR:

Facility ID:	48020003
Status:	No Action Required
Status Date:	06/13/2002
Site Code:	104272
Site Type:	School Investigation
Site Type Detailed:	School
Acres:	11
NPL:	NO
Regulatory Agencies:	DTSC
Lead Agency:	DTSC
Program Manager:	Not reported
Supervisor:	Mark Malinowski
Division Branch:	Northern California Schools & Santa Susana
Assembly:	11
Senate:	03
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	School District
Latitude:	38.3981
Longitude:	-121.935
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - LIVESTOCK
Potential COC:	NONE SPECIFIED No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	NORTH VILLAGE ELEMENTARY
Alias Type:	Alternate Name
Alias Name:	VACAVILLE USD
Alias Type:	Alternate Name
Alias Name:	VACAVILLE USD-NORTH VILLAGE ELEMENTARY
Alias Type:	Alternate Name
Alias Name:	104272
Alias Type:	Project Code (Site Code)
Alias Name:	48020003
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	07/29/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	06/12/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1

NORTH VILLAGE ELEMENTARY (Continued) **S118756979**

Completed Date:	06/13/2002
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

SCH:

Facility ID:	48020003
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	11
National Priorities List:	NO
Cleanup Oversight Agencies:	DTSC
Lead Agency:	DTSC
Lead Agency Description:	* DTSC
Project Manager:	Not reported
Supervisor:	Mark Malinowski
Division Branch:	Northern California Schools & Santa Susana
Site Code:	104272
Assembly:	11
Senate:	03
Special Program Status:	Not reported
Status:	No Action Required
Status Date:	06/13/2002
Restricted Use:	NO
Funding:	School District
Latitude:	38.3981
Longitude:	-121.935
APN:	NONE SPECIFIED
Past Use:	AGRICULTURAL - LIVESTOCK
Potential COC:	NONE SPECIFIED, No Contaminants found
Confirmed COC:	NONE SPECIFIED
Potential Description:	NMA
Alias Name:	NORTH VILLAGE ELEMENTARY
Alias Type:	Alternate Name
Alias Name:	VACAVILLE USD
Alias Type:	Alternate Name
Alias Name:	VACAVILLE USD-NORTH VILLAGE ELEMENTARY
Alias Type:	Alternate Name
Alias Name:	104272
Alias Type:	Project Code (Site Code)
Alias Name:	48020003
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo

NORTH VILLAGE ELEMENTARY (Continued) **S118756979**

Completed Date:	07/29/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Inspections/Visit (Non LUR)
Completed Date:	06/12/2002
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	06/13/2002
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: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

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: 04/05/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 21

Source: EPA
Telephone: N/A
Last EDR Contact: 04/21/2017
Next Scheduled EDR Contact: 07/17/2017
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: 04/05/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 21

Source: EPA
Telephone: N/A
Last EDR Contact: 04/21/2017
Next Scheduled EDR Contact: 07/17/2017
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: 04/05/2017	Source: EPA
Date Data Arrived at EDR: 04/21/2017	Telephone: N/A
Date Made Active in Reports: 05/12/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 21	Next Scheduled EDR Contact: 07/17/2017
	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: 04/07/2017
Number of Days to Update: 92	Next Scheduled EDR Contact: 07/17/2017
	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: 02/07/2017	Source: EPA
Date Data Arrived at EDR: 04/19/2017	Telephone: 800-424-9346
Date Made Active in Reports: 05/05/2017	Last EDR Contact: 04/21/2017
Number of Days to Update: 16	Next Scheduled EDR Contact: 07/31/2017
	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: 02/07/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 16

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/25/2017
Next Scheduled EDR Contact: 07/31/2017
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: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 04/10/2017
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: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 04/10/2017
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: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 04/10/2017
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: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 04/10/2017
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: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

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: 12/28/2016
Date Data Arrived at EDR: 01/04/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 93

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/15/2017
Next Scheduled EDR Contact: 08/28/2017
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: 11/15/2016
Date Data Arrived at EDR: 11/29/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
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: 11/15/2016
Date Data Arrived at EDR: 11/29/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 66

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
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: 09/26/2016
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 11/11/2016
Number of Days to Update: 43

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/29/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Annually

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: 01/30/2017
Date Data Arrived at EDR: 01/31/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 112

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 08/14/2017
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: 01/30/2017
Date Data Arrived at EDR: 01/31/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 112

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 08/14/2017
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: 02/13/2017
Date Data Arrived at EDR: 02/15/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 76

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 05/17/2017
Next Scheduled EDR Contact: 08/28/2017
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

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: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
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 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 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 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 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 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 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 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 R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 11/14/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
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: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Semi-Annually

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/07/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Quarterly

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: 10/06/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Quarterly

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 10/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
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: 11/14/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
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: 10/17/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Quarterly

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

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: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
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: 01/01/2010
Date Data Arrived at EDR: 02/16/2010
Date Made Active in Reports: 04/12/2010
Number of Days to Update: 55

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/11/2017
Next Scheduled EDR Contact: 07/24/2017
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 03/12/2017
Date Data Arrived at EDR: 03/16/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 57

Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 03/16/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Semi-Annually

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: 03/24/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Quarterly

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: 01/14/2017
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
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: 10/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Semi-Annually

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: 09/01/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
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: 10/17/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Quarterly

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: 10/06/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Quarterly

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: 11/14/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
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: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Semi-Annually

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: 10/07/2016
Date Data Arrived at EDR: 01/26/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 99

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

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: 03/27/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Varies

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

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: 01/30/2017
Date Data Arrived at EDR: 01/31/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 112

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 08/14/2017
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: 01/03/2017
Date Data Arrived at EDR: 01/04/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 57

Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 03/29/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Varies

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: 03/02/2017
Date Data Arrived at EDR: 03/02/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/02/2017
Next Scheduled EDR Contact: 07/03/2017
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: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 50

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 01/13/2017
Date Data Arrived at EDR: 01/17/2017
Date Made Active in Reports: 05/31/2017
Number of Days to Update: 134

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 05/15/2017
Next Scheduled EDR Contact: 08/28/2017
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: 05/01/2017
Next Scheduled EDR Contact: 08/14/2017
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: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
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: 05/05/2017
Next Scheduled EDR Contact: 08/14/2017
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: 09/30/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 36

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/28/2017
Next Scheduled EDR Contact: 06/12/2017
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: 01/30/2017
Date Data Arrived at EDR: 01/31/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 112

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 08/14/2017
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: 12/31/2016
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 54

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 04/10/2017
Next Scheduled EDR Contact: 07/24/2017
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: 09/30/2016
Date Data Arrived at EDR: 12/05/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 67

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
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: 03/09/2017
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 67

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/11/2017
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

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

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: 03/06/2017
Date Data Arrived at EDR: 03/07/2017
Date Made Active in Reports: 04/21/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/18/2017
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: 02/18/2014
Date Data Arrived at EDR: 03/18/2014
Date Made Active in Reports: 04/24/2014
Number of Days to Update: 37

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/21/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

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: 03/06/2017
Date Data Arrived at EDR: 03/07/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 77

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 03/07/2017
Next Scheduled EDR Contact: 06/19/2017
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: 12/28/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 37

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/29/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Annually

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: 12/06/2016
Date Data Arrived at EDR: 01/25/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 105

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

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: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 49

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
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: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 49

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
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: 12/12/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 05/02/2017
Next Scheduled EDR Contact: 04/10/2017
Data Release Frequency: Varies

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: 02/24/2017
Next Scheduled EDR Contact: 06/05/2017
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: 04/14/2017
Next Scheduled EDR Contact: 07/24/2017
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: 04/14/2017
Next Scheduled EDR Contact: 07/24/2017
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: 05/19/2017
Next Scheduled EDR Contact: 08/28/2017
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: 02/13/2017
Date Data Arrived at EDR: 02/15/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 86

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 05/17/2017
Next Scheduled EDR Contact: 08/28/2017
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: 05/08/2017
Next Scheduled EDR Contact: 08/21/2017
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: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
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: 12/31/2012
Date Data Arrived at EDR: 01/15/2015
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 14

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/24/2017
Next Scheduled EDR Contact: 07/03/2017
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: 12/31/2014
Date Data Arrived at EDR: 11/24/2015
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 133

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/26/2017
Next Scheduled EDR Contact: 09/04/2017
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: 04/26/2017
Next Scheduled EDR Contact: 08/07/2017
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: 11/25/2013
Date Data Arrived at EDR: 12/12/2013
Date Made Active in Reports: 02/24/2014
Number of Days to Update: 74

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
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: 02/01/2017
Date Data Arrived at EDR: 02/09/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 57

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/21/2017
Next Scheduled EDR Contact: 08/07/2017
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: 05/09/2017
Next Scheduled EDR Contact: 08/21/2017
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: 01/20/2016
Date Data Arrived at EDR: 04/28/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 127

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/10/2017
Next Scheduled EDR Contact: 07/24/2017
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: 04/10/2017
Next Scheduled EDR Contact: 07/24/2017
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: 05/19/2017
Next Scheduled EDR Contact: 09/04/2017
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: 05/19/2017
Next Scheduled EDR Contact: 09/04/2017
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: 05/08/2017
Next Scheduled EDR Contact: 08/21/2017
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: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
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: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
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: 02/01/2011
Date Data Arrived at EDR: 10/19/2011
Date Made Active in Reports: 01/10/2012
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/28/2017
Next Scheduled EDR Contact: 08/07/2017
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: 01/04/2017
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/06/2017
Next Scheduled EDR Contact: 07/17/2017
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: 05/02/2017
Next Scheduled EDR Contact: 08/14/2017
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: 09/30/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 77

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 03/27/2017
Next Scheduled EDR Contact: 07/10/2017
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: 12/31/2013
Date Data Arrived at EDR: 02/24/2015
Date Made Active in Reports: 09/30/2015
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/26/2017
Next Scheduled EDR Contact: 09/04/2017
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: 04/14/2017
Next Scheduled EDR Contact: 07/24/2017
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: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
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: 09/14/2010
Date Data Arrived at EDR: 10/07/2011
Date Made Active in Reports: 03/01/2012
Number of Days to Update: 146

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites
A listing of former lead smelter site locations.

Date of Government Version: 12/05/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 36

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/21/2017
Next Scheduled EDR Contact: 07/17/2017
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: 03/07/2017
Next Scheduled EDR Contact: 07/10/2017
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: 03/07/2017
Next Scheduled EDR Contact: 04/10/2017
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: 02/08/2017
Date Data Arrived at EDR: 02/28/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 38

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
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: 05/31/2017
Next Scheduled EDR Contact: 09/11/2017
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: 06/02/2017
Next Scheduled EDR Contact: 09/11/2017
Data Release Frequency: Varies

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: 03/14/2017
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 21

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/13/2017
Next Scheduled EDR Contact: 06/26/2017
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: 04/04/2017
Date Data Arrived at EDR: 04/07/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 35

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 04/07/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 03/19/2017
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/21/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 10/25/2015
Date Data Arrived at EDR: 01/29/2016
Date Made Active in Reports: 04/05/2016
Number of Days to Update: 67

Source: Department of Defense
Telephone: 571-373-0407
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 07/31/2017
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/02/2016
Date Data Arrived at EDR: 06/03/2016
Date Made Active in Reports: 09/02/2016
Number of Days to Update: 91

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/11/2017
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: 02/22/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 79

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/04/2017
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: 12/28/2016
Date Data Arrived at EDR: 12/28/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 64

Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 03/29/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Quarterly

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: 03/09/2017
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 42

Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 09/23/2016
Date Made Active in Reports: 10/24/2016
Number of Days to Update: 31

Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 03/21/2017
Next Scheduled EDR Contact: 07/03/2017
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: 01/23/2017
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 118

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 04/25/2016
Date Data Arrived at EDR: 04/29/2016
Date Made Active in Reports: 06/21/2016
Number of Days to Update: 53

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 08/07/2017
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: 02/14/2017
Date Data Arrived at EDR: 02/17/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 97

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 05/15/2017
Next Scheduled EDR Contact: 08/28/2017
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: 12/31/2015
Date Data Arrived at EDR: 10/12/2016
Date Made Active in Reports: 12/15/2016
Number of Days to Update: 64

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 04/14/2017
Next Scheduled EDR Contact: 07/24/2017
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/21/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 62

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/04/2017
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: 11/21/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 62

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/04/2017
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: 04/11/2017
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 04/26/2017
Number of Days to Update: 13

Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 04/13/2017
Next Scheduled EDR Contact: 07/24/2017
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: 09/12/2016
Date Data Arrived at EDR: 09/14/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 30

Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 03/13/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Varies

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: 12/02/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 86

Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 03/07/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/14/2016
Date Data Arrived at EDR: 11/15/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 107

Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 05/17/2017
Next Scheduled EDR Contact: 08/28/2017
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: 12/06/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 03/03/2017
Number of Days to Update: 87

Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 03/07/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 03/13/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 50

Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
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: 12/16/2016
Date Data Arrived at EDR: 12/22/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 70

Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 04/03/2017
Next Scheduled EDR Contact: 07/03/2017
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: 01/20/2017
Date Data Arrived at EDR: 03/14/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 50

Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 03/14/2017
Next Scheduled EDR Contact: 06/26/2017
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 board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67

Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 04/14/2017
Next Scheduled EDR Contact: 07/24/2017
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: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
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: 03/24/2017
Next Scheduled EDR Contact: 07/10/2017
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 Historic Gas 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 Historic Dry 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: 04/10/2017
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 31

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/10/2017
Next Scheduled EDR Contact: 07/24/2017
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 04/10/2017
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 21

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 04/10/2017
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 03/06/2017
Date Data Arrived at EDR: 03/08/2017
Date Made Active in Reports: 04/14/2017
Number of Days to Update: 37

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 01/31/2017
Date Data Arrived at EDR: 02/07/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 94

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 04/10/2017
Next Scheduled EDR Contact: 07/24/2017
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

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: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 03/27/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 02/23/2017
Date Data Arrived at EDR: 02/24/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 77

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: Varies

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/17/2016
Date Data Arrived at EDR: 11/22/2016
Date Made Active in Reports: 01/26/2017
Number of Days to Update: 65

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 05/01/2017
Next Scheduled EDR Contact: 08/14/2017
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 01/31/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/14/2017
Number of Days to Update: 70

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 05/01/2017
Next Scheduled EDR Contact: 08/14/2017
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/24/2017
Date Data Arrived at EDR: 02/28/2017
Date Made Active in Reports: 05/12/2017
Number of Days to Update: 73

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 05/01/2017
Next Scheduled EDR Contact: 08/14/2017
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: 04/06/2017
Date Data Arrived at EDR: 04/07/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 40

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 03/31/2017
Next Scheduled EDR Contact: 07/17/2017
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 12/02/2016
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 111

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 03/20/2017
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 57

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 01/23/2017
Date Data Arrived at EDR: 01/25/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 36

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/09/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 77

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 02/07/2017
Date Data Arrived at EDR: 02/10/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 81

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
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: 03/06/2017
Date Data Arrived at EDR: 03/07/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 71

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/18/2017
Date Data Arrived at EDR: 01/20/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 41

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 04/17/2017
Next Scheduled EDR Contact: 07/31/2017
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 11/30/2016
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 111

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 11/30/2017
Next Scheduled EDR Contact: 08/07/2017
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: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 11/14/2016
Date Data Arrived at EDR: 11/18/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 66

Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 04/10/2017
Next Scheduled EDR Contact: 07/24/2017
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 04/17/2017
Date Data Arrived at EDR: 04/18/2017
Date Made Active in Reports: 05/02/2017
Number of Days to Update: 14

Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 04/18/2017
Next Scheduled EDR Contact: 07/31/2017
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2016
Date Data Arrived at EDR: 01/26/2016
Date Made Active in Reports: 03/22/2016
Number of Days to Update: 56

Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 04/17/2017
Next Scheduled EDR Contact: 07/31/2017
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 03/29/2016
Date Data Arrived at EDR: 04/06/2016
Date Made Active in Reports: 06/13/2016
Number of Days to Update: 68

Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 04/17/2017
Next Scheduled EDR Contact: 07/31/2017
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/17/2017
Date Data Arrived at EDR: 01/18/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 112

Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 04/17/2017
Next Scheduled EDR Contact: 07/31/2017
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: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/10/2017
Date Data Arrived at EDR: 01/13/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 110

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 04/10/2017
Next Scheduled EDR Contact: 07/24/2017
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: 03/03/2017
Date Data Arrived at EDR: 03/07/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 71

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 03/31/2017
Date Data Arrived at EDR: 04/06/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 27

Source: Public Works Department Waste Management
Telephone: 415-499-6647
Last EDR Contact: 03/31/2017
Next Scheduled EDR Contact: 07/17/2017
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/22/2017
Date Data Arrived at EDR: 02/23/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 83

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 02/21/2017
Date Data Arrived at EDR: 03/02/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 76

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/11/2017
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 06/24/2016
Date Data Arrived at EDR: 06/27/2016
Date Made Active in Reports: 08/09/2016
Number of Days to Update: 43

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
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: 05/24/2017
Next Scheduled EDR Contact: 09/11/2017
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: 03/15/2017
Date Data Arrived at EDR: 03/16/2017
Date Made Active in Reports: 05/09/2017
Number of Days to Update: 54

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 05/24/2017
Next Scheduled EDR Contact: 09/11/2017
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 02/09/2017
Date Data Arrived at EDR: 02/10/2017
Date Made Active in Reports: 05/17/2017
Number of Days to Update: 96

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 05/01/2017
Next Scheduled EDR Contact: 08/14/2017
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 02/06/2017
Date Data Arrived at EDR: 02/10/2017
Date Made Active in Reports: 04/21/2017
Number of Days to Update: 70

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/08/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/04/2016
Date Data Arrived at EDR: 11/11/2016
Date Made Active in Reports: 01/23/2017
Number of Days to Update: 73

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/08/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: Quarterly

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 02/06/2017
Date Data Arrived at EDR: 02/07/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 85

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 05/09/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 09/02/2016
Date Data Arrived at EDR: 09/06/2016
Date Made Active in Reports: 10/14/2016
Number of Days to Update: 38

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 01/31/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 111

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 04/18/2017
Date Data Arrived at EDR: 04/20/2017
Date Made Active in Reports: 04/21/2017
Number of Days to Update: 1

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 01/19/2017
Date Data Arrived at EDR: 01/25/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 98

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
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: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 56

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2017
Next Scheduled EDR Contact: 07/17/2017
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: 11/08/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 56

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 04/04/2017
Next Scheduled EDR Contact: 07/17/2017
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/30/2016
Date Data Arrived at EDR: 02/09/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 105

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
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: 12/09/2016
Date Data Arrived at EDR: 12/13/2016
Date Made Active in Reports: 03/03/2017
Number of Days to Update: 80

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 05/08/2017
Next Scheduled EDR Contact: 08/21/2017
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: 10/05/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 86

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 03/10/2017
Next Scheduled EDR Contact: 06/19/2017
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58

Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
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: 03/06/2017
Next Scheduled EDR Contact: 06/19/2017
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: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 02/28/2017
Date Data Arrived at EDR: 03/02/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 62

Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
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: 03/21/2017
Date Data Arrived at EDR: 03/23/2017
Date Made Active in Reports: 05/09/2017
Number of Days to Update: 47

Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 03/20/2017
Next Scheduled EDR Contact: 07/03/2017
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 02/21/2017
Date Data Arrived at EDR: 02/21/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 91

Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/04/2017
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: 03/15/2017
Date Data Arrived at EDR: 04/07/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 33

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 03/15/2017
Date Data Arrived at EDR: 04/07/2017
Date Made Active in Reports: 04/21/2017
Number of Days to Update: 14

Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 03/27/2017
Next Scheduled EDR Contact: 06/26/2017
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: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 02/22/2017
Date Data Arrived at EDR: 02/23/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 89

Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
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: 05/24/2017
Next Scheduled EDR Contact: 09/11/2017
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 11/10/2016
Date Made Active in Reports: 01/24/2017
Number of Days to Update: 75

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
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: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 03/14/2017
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 67

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
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: 11/29/2016
Date Data Arrived at EDR: 12/21/2016
Date Made Active in Reports: 12/22/2016
Number of Days to Update: 1

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 03/15/2017
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 47

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 03/09/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 03/01/2017
Date Data Arrived at EDR: 03/30/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 54

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 03/27/2017
Next Scheduled EDR Contact: 07/10/2017
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: 01/04/2017
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 55

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 03/27/2017
Next Scheduled EDR Contact: 07/10/2017
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/20/2017
Date Data Arrived at EDR: 01/24/2017
Date Made Active in Reports: 05/18/2017
Number of Days to Update: 114

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 11/30/2017
Next Scheduled EDR Contact: 07/31/2017
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks
Underground storage tank sites located in Sutter county.

Date of Government Version: 12/02/2016
Date Data Arrived at EDR: 12/06/2016
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 35

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 09/18/2017
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List
Cupa facilities

Date of Government Version: 01/05/2017
Date Data Arrived at EDR: 02/10/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 104

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 05/05/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/23/2017
Date Data Arrived at EDR: 01/25/2017
Date Made Active in Reports: 05/18/2017
Number of Days to Update: 113

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 01/05/2017
Date Data Arrived at EDR: 02/10/2017
Date Made Active in Reports: 05/25/2017
Number of Days to Update: 104

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 06/02/2017
Next Scheduled EDR Contact: 08/21/2017
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 01/25/2017
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 34

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
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: 12/27/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 103

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
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: 03/31/2017
Next Scheduled EDR Contact: 07/17/2017
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: 05/15/2017
Next Scheduled EDR Contact: 08/28/2017
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: 09/26/2016
Date Data Arrived at EDR: 10/27/2016
Date Made Active in Reports: 01/24/2017
Number of Days to Update: 89

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 04/24/2017
Next Scheduled EDR Contact: 08/07/2017
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: 02/27/2017
Date Data Arrived at EDR: 03/15/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 03/15/2017
Next Scheduled EDR Contact: 06/26/2017
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 03/31/2017
Date Data Arrived at EDR: 04/06/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 27

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 03/31/2017
Next Scheduled EDR Contact: 07/17/2017
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 01/30/2017
Date Data Arrived at EDR: 01/31/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 112

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 05/01/2017
Next Scheduled EDR Contact: 08/14/2017
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: 07/30/2013
Date Data Arrived at EDR: 08/19/2013
Date Made Active in Reports: 10/03/2013
Number of Days to Update: 45

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/15/2017
Next Scheduled EDR Contact: 08/28/2017
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 09/29/2016
Date Made Active in Reports: 01/03/2017
Number of Days to Update: 96

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/11/2017
Next Scheduled EDR Contact: 07/24/2017
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: 01/30/2017
Date Data Arrived at EDR: 02/01/2017
Date Made Active in Reports: 02/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/03/2017
Next Scheduled EDR Contact: 08/14/2017
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 07/22/2016
Date Made Active in Reports: 11/22/2016
Number of Days to Update: 123

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/18/2017
Next Scheduled EDR Contact: 07/31/2017
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/22/2017
Next Scheduled EDR Contact: 09/04/2017
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 04/14/2016
Date Made Active in Reports: 06/03/2016
Number of Days to Update: 50

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 03/13/2017
Next Scheduled EDR Contact: 06/26/2017
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

VACANT WAREHOUSE
700 CROCKER DRIVE
VACAVILLE, CA 95688

TARGET PROPERTY COORDINATES

Latitude (North):	38.410999 - 38˚ 24' 39.60''
Longitude (West):	121.948992 - 121˚ 56' 56.37''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	591761.8
UTM Y (Meters):	4251734.0
Elevation:	108 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5629044 ALLENDALE, 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).

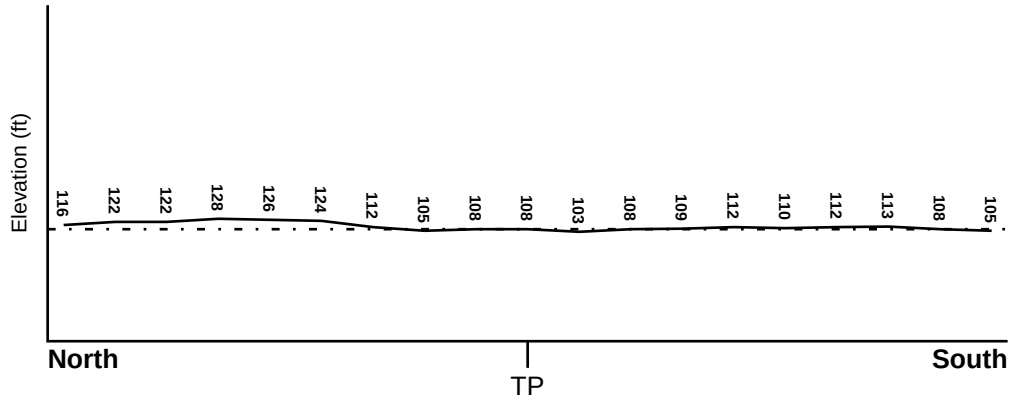
TOPOGRAPHIC INFORMATION

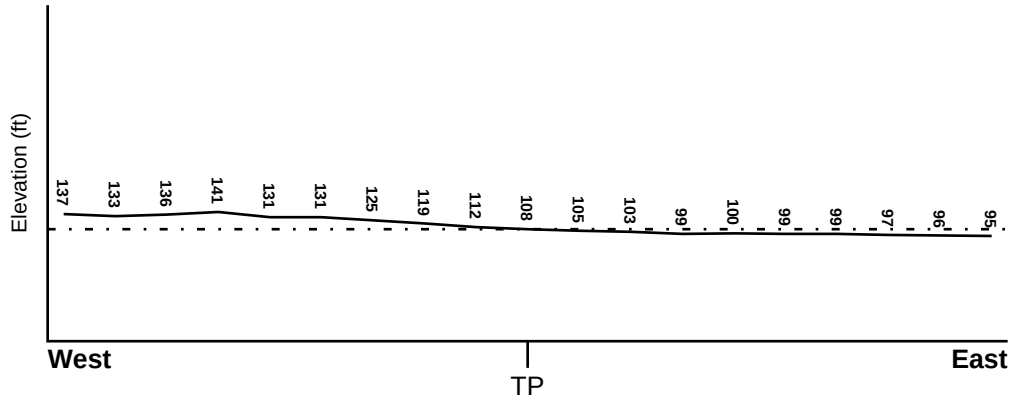
Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

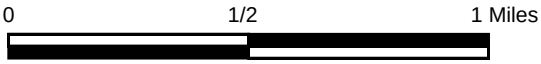
General Topographic Gradient: General ENE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES





Target Property Elevation: 108 ft.



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
06095C0162F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06095C0166F	FEMA FIRM Flood data
06095C0164E	FEMA FIRM Flood data
06095C0168E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
ALLENDALE	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
12	1/2 - 1 Mile South	SW
13	1/2 - 1 Mile SSW	ESE
21	1/2 - 1 Mile SSW	SE

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

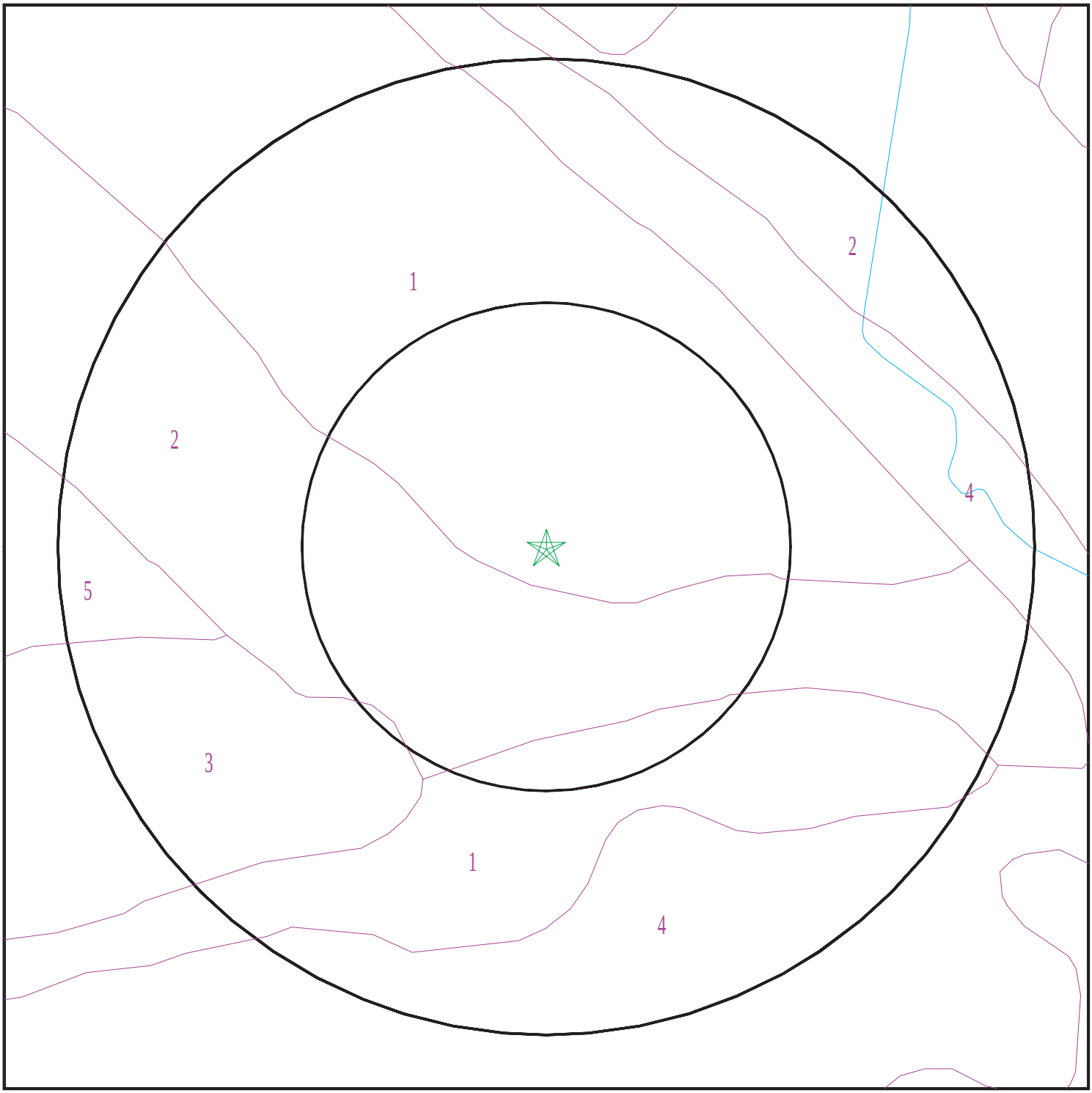
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

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).

SSURGO SOIL MAP - 4956081.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	Vacant Warehouse	CLIENT:	Stantec
ADDRESS:	700 Crocker Drive Vacaville CA 95688	CONTACT:	Danielle Manning
		INQUIRY #:	4956081.2s
LAT/LONG:	38.410999 / 121.948992	DATE:	June 05, 2017 2:35 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

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. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Capay

Soil Surface Texture: silty clay loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	20 inches	silty clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.1
2	20 inches	50 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4
3	50 inches	79 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 8.4 Min: 7.4

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Map ID: 2

Soil Component Name: San Ysidro

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
2	14 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 7.8 Min: 6.1
3	27 inches	53 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
4	53 inches	68 inches	stratified sandy loam to clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

Soil Map ID: 3

Soil Component Name: Corning

Soil Surface Texture: gravelly loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	gravelly loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 14 Min: 4	Max: 6 Min: 5.1
2	16 inches	25 inches	clay	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 6 Min: 5.6
3	25 inches	59 inches	very gravelly sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Gravels, Gravels with fines, Clayey Gravel	Max: 1.4 Min: 0.42	Max: 8.4 Min: 6.6

Soil Map ID: 4

Soil Component Name: San Ysidro

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	14 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
2	14 inches	27 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 7.8 Min: 6.1
3	27 inches	53 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
4	53 inches	68 inches	stratified sandy loam to clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

Soil Map ID: 5

Soil Component Name: San Ysidro

Soil Surface Texture: sandy loam

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Moderately well drained

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	25 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), silt.	Max: 14 Min: 4	Max: 6.5 Min: 5.6
2	25 inches	35 inches	clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit 50% or more), Fat Clay.	Max: 0.42 Min: 0.01	Max: 7.8 Min: 6.1
3	35 inches	53 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 1.4 Min: 0.42	Max: 7.8 Min: 6.1
4	53 inches	68 inches	stratified sandy loam to clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Clayey Soils.	FINE-GRAINED SOILS, Silts and Clays (liquid limit less than 50%), Lean Clay	Max: 4 Min: 1.4	Max: 8.4 Min: 7.4

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 1 mile
State Database	1.000

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A8	USGS40000188131	1/2 - 1 Mile SSW
10	USGS40000188132	1/2 - 1 Mile SSW
14	USGS40000188167	1/2 - 1 Mile East
17	USGS40000188109	1/2 - 1 Mile SSW
19	USGS40000188160	1/2 - 1 Mile West
20	USGS40000188245	1/2 - 1 Mile NE
22	USGS40000188120	1/2 - 1 Mile SW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

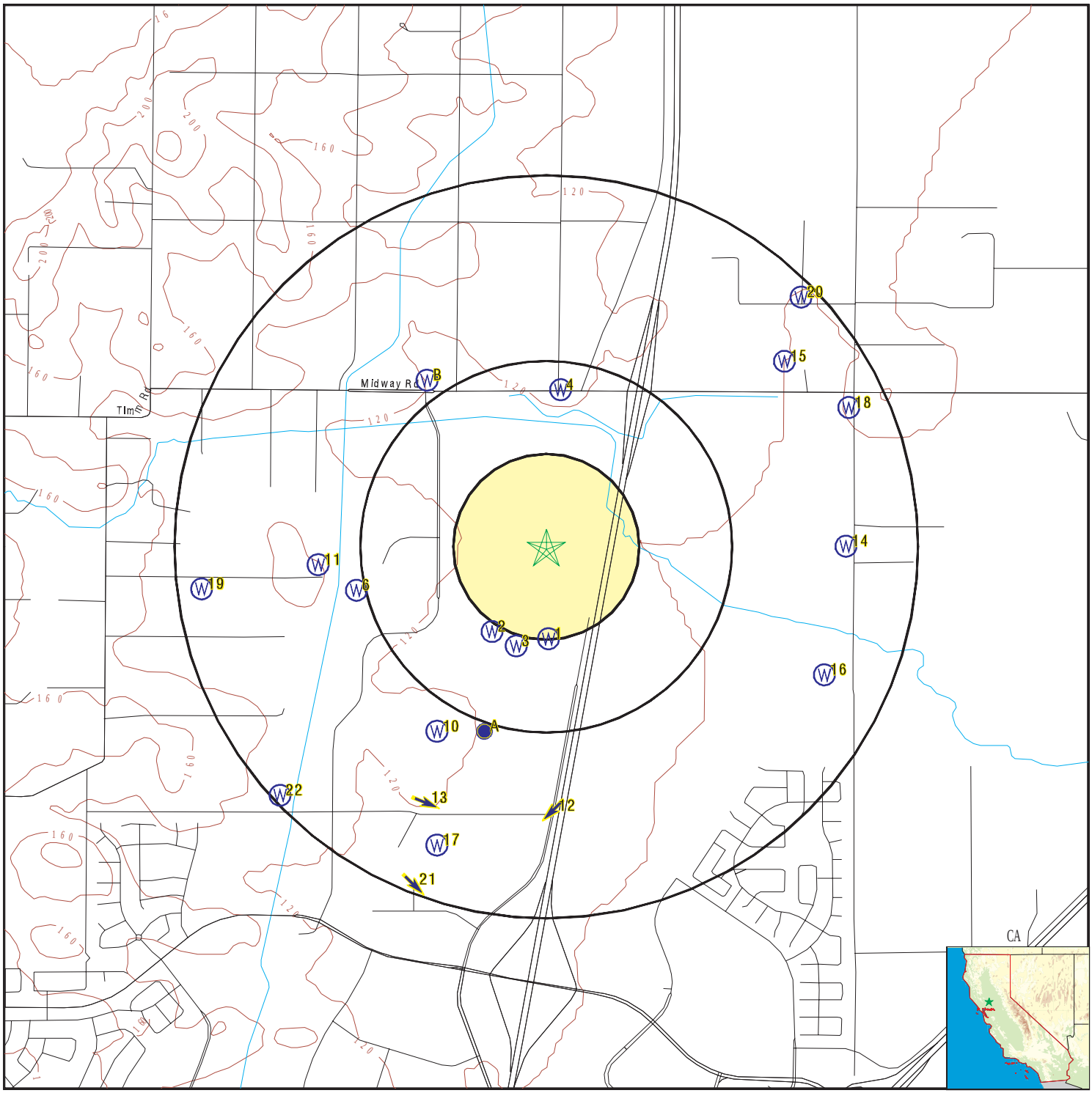
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	20341	1/8 - 1/4 Mile South
2	20340	1/4 - 1/2 Mile SSW
3	7290	1/4 - 1/2 Mile SSW
4	20361	1/4 - 1/2 Mile North
A5	20339	1/2 - 1 Mile SSW
6	CADW60000002842	1/2 - 1 Mile WSW
B7	CADW60000002841	1/2 - 1 Mile NW
B9	CADW60000017178	1/2 - 1 Mile NW
11	CADW60000017180	1/2 - 1 Mile West
15	7289	1/2 - 1 Mile NE
16	CADW60000017181	1/2 - 1 Mile ESE
18	CADW60000003573	1/2 - 1 Mile ENE

PHYSICAL SETTING SOURCE MAP - 4956081.2s



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: Vacant Warehouse ADDRESS: 700 Crocker Drive Vacaville CA 95688 LAT/LONG: 38.410999 / 121.948992	CLIENT: Stantec CONTACT: Danielle Manning INQUIRY #: 4956081.2s DATE: June 05, 2017 2:35 pm

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Map ID Direction Distance Elevation	Database	EDR ID Number
1 **South** **1/8 - 1/4 Mile** **Higher**	**CA WELLS**	**20341**

Water System Information:

Prime Station Code:	4800595-004	User ID:	ENG
FRDS Number:	4800595004	County:	Solano
District Number:	04	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	382427.0 1215652.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 06		
System Number:	4800595		
System Name:	INTERNATIONAL HOME FOODS, INC.		
Organization That Operates System:			
	500 CROCKER RD. VACAVILLE, CA 95688		
Pop Served:	700	Connections:	1
Area Served:	Not Reported		
Sample Collected:	13-SEP-11	Findings:	3.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	24-OCT-12	Findings:	4. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-AUG-13	Findings:	0.18 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	12-AUG-13	Findings:	160. UG/L
Chemical:	BARIUM		
Sample Collected:	12-AUG-13	Findings:	11. UG/L
Chemical:	CHROMIUM (TOTAL)		
Sample Collected:	12-AUG-13	Findings:	3.2 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-SEP-14	Findings:	21. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	10-SEP-14	Findings:	3.1 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-14	Findings:	10. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	29-SEP-15	Findings:	3.3 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-SEP-16	Findings:	0.79 MG/L
Chemical:	NITRATE (AS N)		
Sample Collected:	07-SEP-16	Findings:	0.27 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	07-SEP-16	Findings:	3. UG/L
Chemical:	ARSENIC		

Sample Collected:	07-SEP-16	Findings:	210. UG/L
Chemical:	BARIUM		
Sample Collected:	07-SEP-16	Findings:	26. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	07-SEP-16	Findings:	27. UG/L
Chemical:	CHROMIUM (TOTAL)		
Sample Collected:	07-SEP-16	Findings:	1.21 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07-SEP-16	Findings:	1.23 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	28-SEP-16	Findings:	26. UG/L
Chemical:	CHROMIUM, HEXAVALENT		

2
SSW **CA WELLS** **20340**
1/4 - 1/2 Mile
Higher

Water System Information:

Prime Station Code:	4800595-003	User ID:	ENG
FRDS Number:	4800595003	County:	Solano
District Number:	04	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	382428.0 1215702.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 04		
System Number:	4800595		
System Name:	INTERNATIONAL HOME FOODS, INC.		
Organization That Operates System:			
	500 CROCKER RD.		
	VACAVILLE, CA 95688		
Pop Served:	700	Connections:	1
Area Served:	Not Reported		

3
SSW **CA WELLS** **7290**
1/4 - 1/2 Mile
Higher

Water System Information:

Prime Station Code:	07N/01W-35M01 M	User ID:	ENG
FRDS Number:	4800595001	County:	Solano
District Number:	04	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	382426.0 1215658.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 05		
System Number:	4800595		
System Name:	INTERNATIONAL HOME FOODS, INC.		
Organization That Operates System:			
	500 CROCKER RD.		
	VACAVILLE, CA 95688		
Pop Served:	700	Connections:	1
Area Served:	Not Reported		

Sample Collected:	13-SEP-11	Findings:	4. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-OCT-12	Findings:	4.4 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	12-AUG-13	Findings:	0.11 MG/L
Chemical:	FLUORIDE (F) (NATURAL-SOURCE)		
Sample Collected:	12-AUG-13	Findings:	3.3 UG/L
Chemical:	ARSENIC		
Sample Collected:	12-AUG-13	Findings:	130. UG/L
Chemical:	BARIUM		
Sample Collected:	12-AUG-13	Findings:	4. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	10-SEP-14	Findings:	12. UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	10-SEP-14	Findings:	3.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	25-SEP-14	Findings:	8.7 UG/L
Chemical:	CHROMIUM, HEXAVALENT		
Sample Collected:	29-SEP-15	Findings:	4. MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-SEP-16	Findings:	1.26 PCI/L
Chemical:	GROSS ALPHA COUNTING ERROR		
Sample Collected:	07-SEP-16	Findings:	1.24 PCI/L
Chemical:	GROSS ALPHA MDA95		
Sample Collected:	26-SEP-16	Findings:	10. UG/L
Chemical:	CHROMIUM, HEXAVALENT		

4
North **CA WELLS** **20361**
1/4 - 1/2 Mile
Higher

Water System Information:

Prime Station Code:	4800786-001	User ID:	ENG
FRDS Number:	4800786001	County:	Solano
District Number:	04	Station Type:	WELL/AMBNT
Water Type:	Well/Groundwater	Well Status:	Active Untreated
Source Lat/Long:	382502.4 1215650.5	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	4800786		
System Name:	MIDWAY FOODS, INC.		
Organization That Operates System:			
	Not Reported		
Pop Served:	Unknown, Small System	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	31-OCT-11	Findings:	4.8 MG/L
Chemical:	NITRATE (AS NO3)		

Sample Collected:	12-APR-12	Findings:	4.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	20-MAR-13	Findings:	4.8 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	24-FEB-14	Findings:	4.9 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	06-MAY-15	Findings:	4.7 MG/L
Chemical:	NITRATE (AS NO3)		
Sample Collected:	07-APR-16	Findings:	0.95 MG/L
Chemical:	NITRATE (AS N)		

A5
SSW **CA WELLS** **20339**
1/2 - 1 Mile
Higher

Water System Information:

Prime Station Code:	4800595-002	User ID:	ENG
FRDS Number:	4800595002	County:	Solano
District Number:	04	Station Type:	WELL/AMBNT/MUN/INTAKE/SUPPLY
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	382415.0 1215705.0	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 03		
System Number:	4800595		
System Name:	INTERNATIONAL HOME FOODS, INC.		
Organization That Operates System:			
	500 CROCKER RD.		
	VACAVILLE, CA 95688		
Pop Served:	700	Connections:	1
Area Served:	Not Reported		
Sample Collected:	14-SEP-06	Findings:	3. MG/L
Chemical:	NITRATE (AS NO3)		

6
WSW **CA WELLS** **CADW60000002842**
1/2 - 1 Mile
Higher

Objectid:	2842
Latitude:	38.4093
Longitude:	-121.9584
Site code:	384093N1219584W001
State well numbe:	07N01W34K001M
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	48
County name:	Solano
Basin code:	’5-21.66’
Basin desc:	Solano
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000002842

Map ID Direction Distance Elevation	Database	EDR ID Number
B7 **NW** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADW60000002841**

Objectid:	2841
Latitude:	38.4173
Longitude:	-121.9547
Site code:	384173N1219547W001
State well numbe:	07N01W27R002M
Local well name:	’’
Well use id:	4
Well use descrip:	Residential
County id:	48
County name:	Solano
Basin code:	’5-21.66’
Basin desc:	Solano
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000002841

A8 **SSW** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS40000188131**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-382413121570201		
Monloc name:	007N001W34R002M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18020109	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.4035206
Longitude:	-121.9516328	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:	115.00
Vert measure units:	feet	Vertacc measure val:	5.0
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19720229	Welldepth:	1000
Welldepth units:	ft	Wellholedepth:	1018
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1972-02-29	66.42	

Map ID Direction Distance Elevation	Database	EDR ID Number
B9 **NW** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADW60000017178**

Objectid:	17178
Latitude:	38.4177
Longitude:	-121.9551
Site code:	384177N1219551W001
State well numbe:	07N01W27R001M
Local well name:	’’
Well use id:	4
Well use descrip:	Residential
County id:	48
County name:	Solano
Basin code:	’5-21.66’
Basin desc:	Solano
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000017178

---

10 **SSW** **1/2 - 1 Mile** **Higher**		**FED USGS**	**USGS40000188132**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-382414121571201		
Monloc name:	007N001W34R001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18020109	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.4037983
Longitude:	-121.9544107	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:	120.00
Vert measure units:	feet	Vertacc measure val:	5.0
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19740628	Welldepth:	236
Welldepth units:	ft	Wellholedepth:	236
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

---

11 **West** **1/2 - 1 Mile** **Higher**	**CA WELLS**	**CADW60000017180**

Objectid:	17180
Latitude:	38.4103
Longitude:	-121.9603
Site code:	384103N1219603W001
State well numbe:	07N01W34F001M
Local well name:	''
Well use id:	4
Well use descrip:	Residential
County id:	48
County name:	Solano
Basin code:	'5-21.66'
Basin desc:	Solano
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000017180

12
South
1/2 - 1 Mile
Higher

AQUIFLOW **53095**

Site ID:	Not Reported
Groundwater Flow:	SW
Shallow Water Depth:	29.46
Deep Water Depth:	31.04
Average Water Depth:	Not Reported
Date:	08/04/1994

13
SSW
1/2 - 1 Mile
Higher

AQUIFLOW **53090**

Site ID:	Not Reported
Groundwater Flow:	ESE
Shallow Water Depth:	35
Deep Water Depth:	67
Average Water Depth:	Not Reported
Date:	03/26/1997

14
East
1/2 - 1 Mile
Lower

FED USGS **USGS40000188167**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-382440121555901		
Monloc name:	007N001W35H001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18020109	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.4110204
Longitude:	-121.9341323	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:	94.00
Vert measure units:	feet	Vertacc measure val:	5.0
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19560505	Welldepth:	171
Welldepth units:	ft	Wellholedepth:	171
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1980-03-18	17.25		1956-05-05	24.00	

15
NE
1/2 - 1 Mile
Lower

CA WELLS **7289**

Water System Information:

Prime Station Code:	07N/01W-26Q01 M	User ID:	ENG
FRDS Number:	4800755001	County:	Solano
District Number:	04	Station Type:	WELL/AMBNT/MUN/INTAKE
Water Type:	Well/Groundwater	Well Status:	Active Raw
Source Lat/Long:	382506.3 1215610.2	Precision:	1,000 Feet (10 Seconds)
Source Name:	WELL 01		
System Number:	4800755		
System Name:	GANDY DANCER CAMPGROUND		
Organization That Operates System:	Not Reported		
Pop Served:	100	Connections:	Unknown, Small System
Area Served:	Not Reported		
Sample Collected:	06-MAY-15	Findings:	2.2 MG/L
Chemical:	NITRATE (AS NO3)		

16
ESE
1/2 - 1 Mile
Lower

CA WELLS **CADW60000017181**

Objectid:	17181
Latitude:	38.406
Longitude:	-121.9352
Site code:	384060N1219352W001
State well numbe:	07N01W35R001M
Local well name:	’’
Well use id:	6
Well use descrip:	Unknown
County id:	48
County name:	Solano
Basin code:	’5-21.66’
Basin desc:	Solano
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000017181

17
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000188109**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-382358121571201		
Monloc name:	006N001W03A002M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18020109	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.399354
Longitude:	-121.9544106	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:	112.00
Vert measure units:	feet	Vertacc measure val:	5.0
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19760707	Welldepth:	280
Welldepth units:	ft	Wellholedepth:	280
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

18
ENE
1/2 - 1 Mile
Lower

CA WELLS **CADW60000003573**

Objectid:	3573
Latitude:	38.416435
Longitude:	-121.933988
Site code:	384164N1219340W001
State well numbe:	Not Reported
Local well name:	'CofV MW-98A'
Well use id:	1
Well use descrip:	Observation
County id:	48
County name:	Solano
Basin code:	'5-21.66'
Basin desc:	Solano
Dwr region id:	80236
Dwr region:	North Central Region Office
Site id:	CADW60000003573

19
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000188160**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-382434121575401		
Monloc name:	007N001W34M001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18020109	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.4093537
Longitude:	-121.9660778	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:	130.00
Vert measure units:	feet	Vertacc measure val:	5.0
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19771106	Welldepth:	359
Welldepth units:	ft	Wellholedepth:	359
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1980-03-18	70.45	

20
NE
1/2 - 1 Mile
Lower

FED USGS **USGS40000188245**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-382515121560701		
Monloc name:	007N001W26J001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18020109	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.4207424
Longitude:	-121.9363548	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:	95.00
Vert measure units:	feet	Vertacc measure val:	5.0
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19781127	Welldepth:	124
Welldepth units:	ft	Wellholedepth:	124
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 1

Date	Feet below Surface	Feet to Sealevel
1978-11-27	15.00	

21
SSW
1/2 - 1 Mile
Higher

AQUIFLOW **53005**

Site ID:	Not Reported
Groundwater Flow:	SE
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	54
Date:	07/11/1995

Map ID Direction Distance Elevation	Database	EDR ID Number
22 **SW** **1/2 - 1 Mile** **Higher**	**FED USGS**	**USGS40000188120**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-382405121574001		
Monloc name:	006N001W03C001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18020109	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	38.4012984
Longitude:	-121.9621887	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:	128.00
Vert measure units:	feet	Vertacc measure val:	5.0
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	Central Valley aquifer system		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19761124	Welldepth:	260
Welldepth units:	ft	Wellholedepth:	260
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 0

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
95688	14	0

Federal EPA Radon Zone for SOLANO County: 3

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 Zip Code: 95688

Number of sites tested: 8

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	1.200 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

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 E HISTORICAL RECORDS

Vacant Warehouse
700 Crocker Drive
Vacaville, CA 95688

Inquiry Number: 4956081.7
June 06, 2017

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

700 Crocker Drive
Vacant Warehouse
Vacaville, CA 95688

RESEARCH SOURCE

Source 1:

Solano Recorder
Solano, CA

PROPERTY INFORMATION

Deed 1:

Type of Deed:	deed
Title is vested in:	Lucky No Cal Investors LLC
Title received from:	Lucky Stores Properties Inc
Deed Dated	12/7/2006
Deed Recorded:	12/22/2006
Book:	NA
Page:	na
Volume:	na
Instrument:	na
Docket:	NA
Land Record Comments:	apn chg
Miscellaneous Comments:	
Legal Description:	See Exhibit
Legal Current Owner:	Lucky No Cal Investors LLC
Parcel # / Property Identifier:	0106-240-340, 0106-240-350
Comments:	See Exhibit

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

Deed Exhibit 1

RECORDING REQUESTED BY:
Fidelity National Title Company
Escrow No.: 06-228872-DD
Locate No.: CAFNT0948-0948-0001-0000228872
Title No.: 06-228872

When Recorded Mail Document and Tax Statement To:
Lucky (Fla) NoCAL Investor LLC
250 Parkcenter Boulevard
Boise, Idaho 83706
Attn: Susan A. McMillan, Esq.
Albertsons LLC

Recorded in Official Records, Solano County
Marc C. Tonnesen
Assessor/Recorder

12/22/2006
2:31 PM
AR21
06

02 Fidelity Title Co

Doc#: 200600162306

Titles: 1 **Pages: 7**

Fees	25.00
Taxes	0.00
Other	0.00
PAID	$25.00

APN: PTN: 106-240-230 and 106-240-240

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $ — 0 — **City Transfer Tax is $ —0 —**
[ ] 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 **Vacaville,**
"The grantors and the grantees in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property, R & T 11925." This conveyance is a lot line adjustment for sewer purposes only. This is a bona fide gift and the grantor received nothing in return. R&T 11911
FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Lucky Stores Properties, Inc., a Delaware Corporation, Successor by Merger to LKS Properties, a California Corporation

hereby GRANT(S) to Lucky (Fla) NoCal Investor LLC, a Delaware Limited Liability Company

the following described real property in the City of **Vacaville,** County of **Solano,** State of **California:**
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: December 7, 2006

STATE OF ~~CALIFORNIA~~ IDAHO)
COUNTY OF ADA)
ON December 7, 2006 before me,
Stacie Zenovich
(here insert name and title of the officer), personally appeared Paul Rowan, Authorized Signatory,
personally known to me (or 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.

Witness my hand and official seal.

Signature _____ (Seal)

MY COMMISSION EXPIRES
May 14, 2008
BONDED THRU NOTARY PUBLIC UNDERWRITERS

LUCKY STORES PROPERTIES, INC., a Delaware Corporation:

STACIE D. ZENOVICH
NOTARY PUBLIC
STATE OF IDAHO

MAIL TAX STATEMENTS AS DIRECTED ABOVE

Exhibit "A"
TRANSFER PARCEL

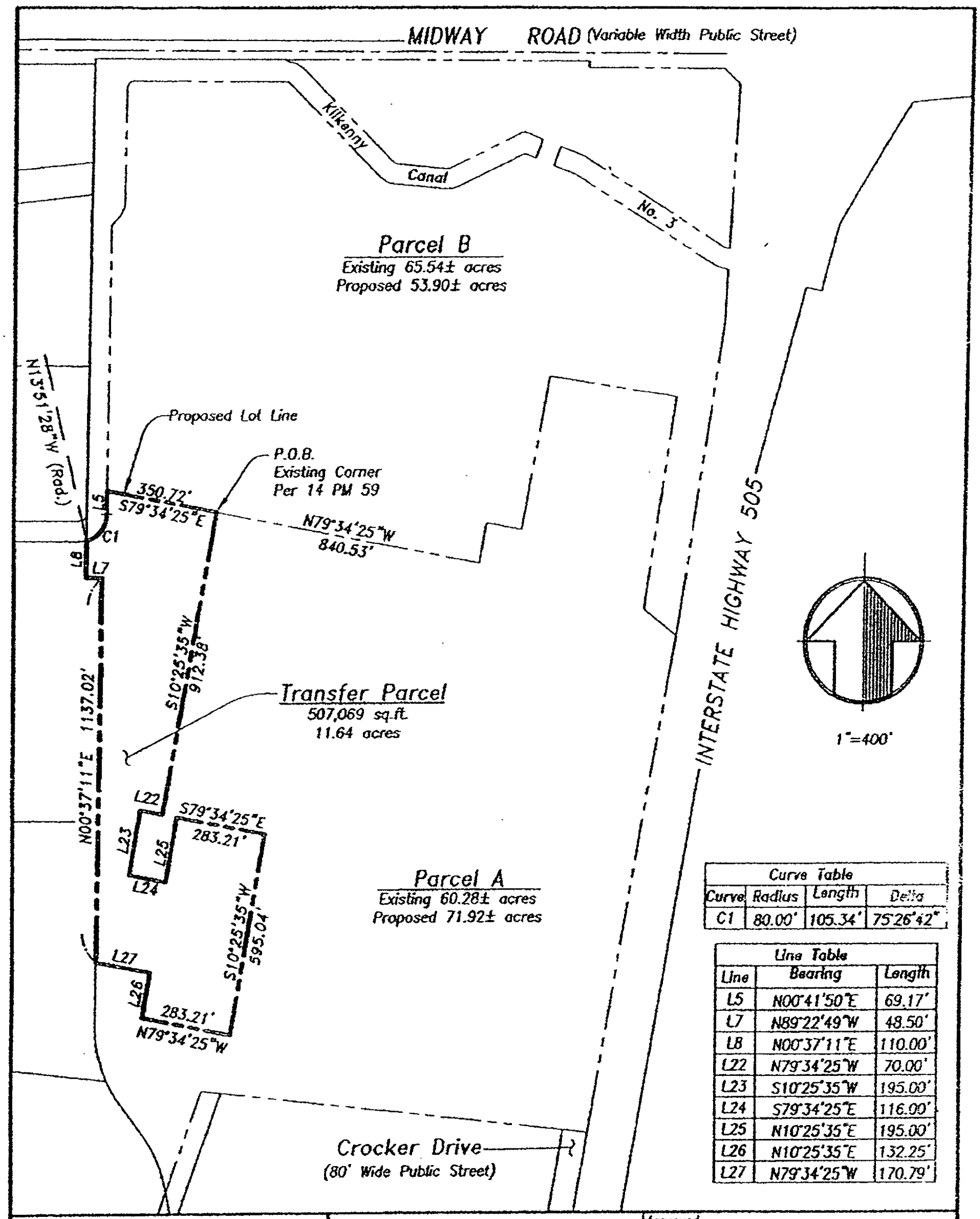
All that certain real property situate in the City of Vacaville, County of Solano, State of California, being a portion of Parcel "B" as shown on that certain Parcel Map filed for record January 17, 1978 in Book 14 of Parcel Maps at Page 59 in the Office of the Solano County Recorder, more particularly described as follows:

Beginning at a point on the southerly line of said Parcel "B" at the westerly terminus of that course shown on said map as North 79°34'25" West 840.53 feet; thence along the easterly, southerly and westerly lines of said Parcel "B" the following courses: South 10°25'35" West, 912.38 feet; thence North 79°34'25" West, 70.00 feet; thence South 10°25'35" West, 195.00 feet; thence South 79°34'25" East, 116.00 feet; thence North 10°25'35" East, 195.00 feet; thence South 79°34'25" East, 283.21 feet; thence South 10°25'35" West, 595.04 feet; thence North 79°34'25" West, 283.21 feet; thence North 10°25'35" East, 132.25 feet; thence North 79°34'25" West, 170.79 feet; thence North 00°37'11" East, 1137.02 feet; thence North 89°22'49" West, 48.50 feet; thence North 00°37'11" East, 110.00 feet to a non tangent curve concave northwesterly having a radius of 80.00 feet, from which point the radius bears North 13°51'28" West; thence northeasterly along the arc of said curve 105.34 feet through a central angle of 75°26'42"; thence North 00°41'50" East, 69.17 feet to the intersection with the westerly prolongation of said course in the southerly line of said Parcel "B" shown as North 79°34'25" West, 840.53 feet; thence leaving said westerly line, along said prolongation South 79°34'25" East, 350.72 feet to the point of beginning.

Containing 11.64 acres more or less.

Bearings used in this description are identical to those shown on said Parcel Map.

LICENSED LAND SURVEYOR
TY HAWKINS
No. 7973
Exp. 12/31/06
STATE OF CALIFORNIA



Curve Table			
Curve	Radius	Length	Delta
C1	80.00'	105.34'	75°26'42"

Line Table		
Line	Bearing	Length
L5	N00°41'50"E	69.17'
L7	N89°22'49"W	48.50'
L8	N00°37'11"E	110.00'
L22	N79°34'25"W	70.00'
L23	S10°25'35"W	195.00'
L24	S79°34'25"E	116.00'
L25	N10°25'35"E	195.00'
L26	N10°25'35"E	132.25'
L27	N79°34'25"W	170.79'

Mountain Pacific Surveys
Land Surveying • Mapping • Planning
1505 W. Texas Street
Fairfield, CA 94533
PH (707) 425-6234
FAX (707) 425-1969

Plat To Accompany Legal Description Transfer Parcel From Parcel B To Parcel A as Parcels are Shown in Book 14 of Parcel Maps at Page 59 Solano County Records. Vacaville, California

Approved			
Drawn	TH	Scale	1"=400'
Date	10/19/06	Sheet No.	2
Proj. No.	506073	of	2

Government Code 27361.7

I certify under penalty of perjury that the notary seal on the document to which this statement is attached reads as follows:

Name of Notary Stacie D. Zenovich

Commission Number

Place of Execution Boise, Idaho

Date Commission Expires May 14, 2008
Bonded thru Notary Public Underwriters

Date: 12-21-06

Doris M. DeFosier
Signature

FIDELITY NATIONAL TITLE COMPANY
Firm Name (if any)

s:\recorder\forms\notary seal

RECORDING REQUESTED BY:
Fidelity National Title Company
Escrow No.: 06-**228872**-DD
Locate No.: CAFNT0948-0948-0001-0000228872
Title No.: 06-**228872**

When Recorded Mail Document and Tax Statement To:
Lucky (Fla) NoCAL Investor LLC

APN: PTN: 106-240-230 and 106-240-240

SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned grantor(s) declare(s)
Documentary transfer tax is $ **City Transfer Tax is $**
[ ] 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 **Vacaville**,
"The grantors and the grantees in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property, R & T 11925."

FOR A VALUABLE CONSIDERATION, receipt of which is hereby acknowledged, Lucky Sotres Properties, Inc., a Delaware Corporation, Successor by Merger of LKS Properties, a California Corporation

hereby GRANT(S) to Lucky (Fla) NoCal Investor LLC , a California Limited Liability Company

the following described real property in the City of **Vacaville**, County of **Solano**, State of **California**:
SEE EXHIBIT "A" ATTACHED HERETO AND MADE A PART HEREOF

DATED: December 1, 2006

STATE OF ~~CALIFORNIA~~ IDAHO)
COUNTY OF _____)
ON _____ before me,
_____
(here insert name and title of the officer), personally appeared _____
_____,
personally known to me (or 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.

Witness my hand and official seal.

Signature _____ (Seal)

MY COMMISSION EXPIRES: _____

_____
LUCKY STORES PROPERTIES, INC., a Delaware Corporation:

BY: _____

BY: _____

_____

_____

MAIL TAX STATEMENTS AS DIRECTED ABOVE

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Containing 11.64 acres more or less.

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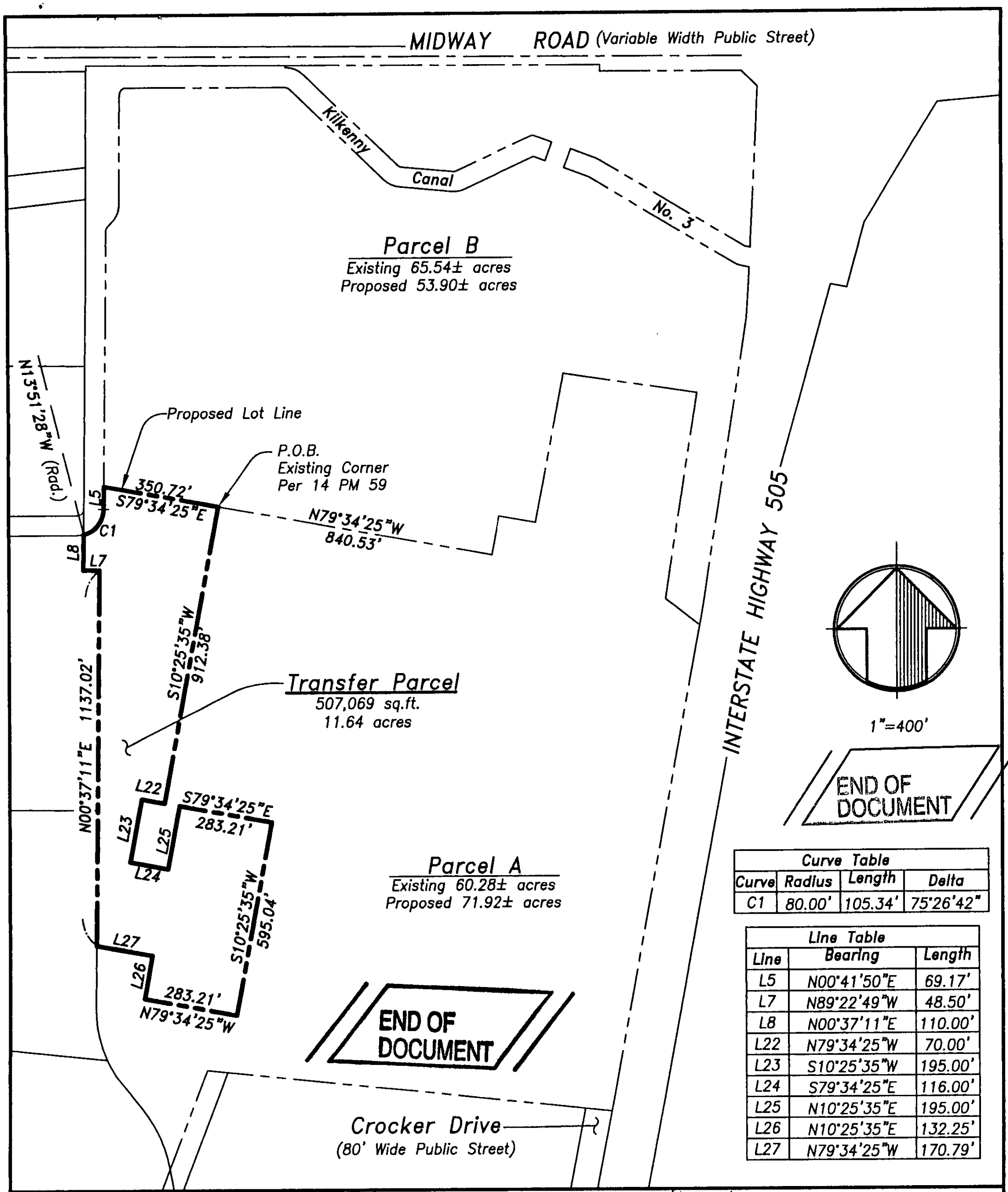

Curve Table			
Curve	Radius	Length	Delta
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Approved			
Drawn	TH	Scale	1"=400'
Date	10/19/06	Sheet No.	2
Proj. No.	506073	of	2

Vacant Warehouse

700 Crocker Drive

Vacaville, CA 95688

Inquiry Number: 4956081.12

June 06, 2017

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

06/06/17

Site Name:

Vacant Warehouse
700 Crocker Drive
Vacaville, CA 95688
EDR Inquiry # 4956081.12

Client Name:

Stantec
3875 Atherton Rd
Rocklin, CA 95765
Contact: Danielle Manning

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2012	1"=500'	Flight Year: 2012	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1993	1"=500'	Acquisition Date: June 16, 1993	USGS/DOQQ
1984	1"=500'	Flight Date: June 08, 1984	USDA
1974	1"=500'	Flight Date: July 18, 1974	USGS
1968	1"=500'	Flight Date: May 28, 1968	USGS
1952	1"=500'	Flight Date: August 15, 1952	USDA
1937	1"=500'	Flight Date: August 25, 1937	USDA

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INQUIRY #: 4956081.12
YEAR: 2012
= 500'
N
EDR

INQUIRY #: 4956081.12
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 4956081.12
YEAR: 2009
= 500'
N
EDR

INQUIRY #: 4956081.12
YEAR: 2006
= 500'
N
EDR

INQUIRY #: 4956081.12
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 4956081.12

YEAR: 1993

= 500'

N

EDR

INQUIRY #: 4956081.12
YEAR: 1984
= 500'
N
EDR

INQUIRY #: 4956081.12
YEAR: 1974
= 500'
N
EDR

INQUIRY #: 4956081.12

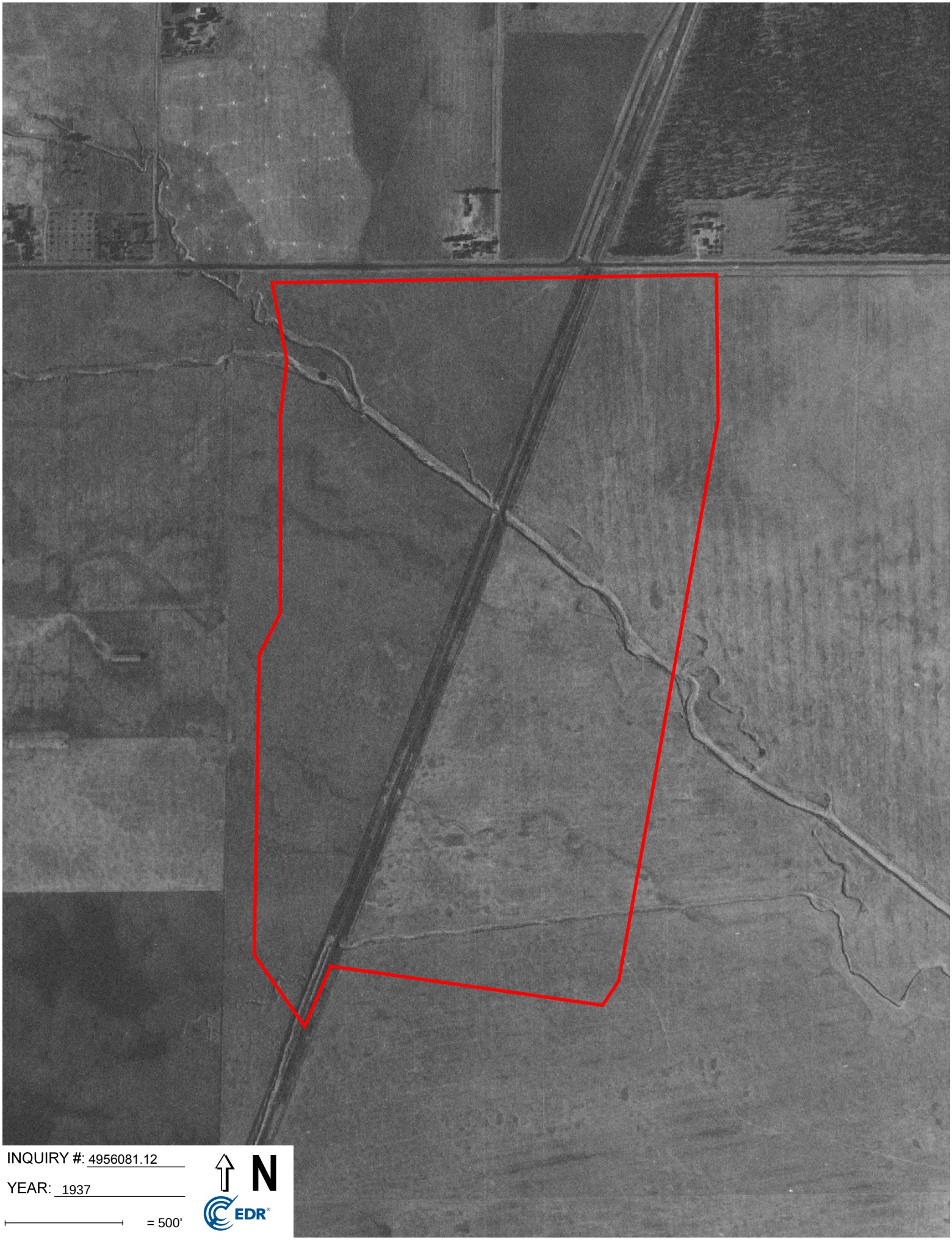
YEAR: 1968

= 500'

N

EDR

INQUIRY #: 4956081.12
YEAR: 1952
= 500'
N
EDR


INQUIRY #: 4956081.12
YEAR: 1937
= 500'
N
EDR

Vacant Warehouse
700 Crocker Drive
Vacaville, CA 95688

Inquiry Number: 4956081.5
June 23, 2017

The EDR-City Directory Image Report

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

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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This Report contains certain 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 ANY SUCH 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, environmental risk levels 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 orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide 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

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report 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 Report includes a search of available city directory data at 5 year intervals.

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2013	☑	☑	Cole Information Services
2008	☐	☑	Cole Information Services
2003	☑	☑	Cole Information Services
1999	☑	☑	Cole Information Services
1995	☑	☑	Cole Information Services
1992	☑	☑	Cole Information Services
1990	☑	☑	Haines Criss-Cross Directory
1985	☐	☑	Haines Criss-Cross Directory
1980	☐	☐	Haines Criss-Cross Directory
1975	☐	☐	Haines Criss-Cross Directory

RECORD SOURCES

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FINDINGS

TARGET PROPERTY STREET

700 Crocker Drive
Vacaville, CA 95688

Year	*CD Image*	*Source*	
CROCKER DR			
2013	pg A1	Cole Information Services	
2008	-	Cole Information Services	Target and Adjoining not listed in Source
2003	pg A9	Cole Information Services	
1999	pg A13	Cole Information Services	
1995	pg A18	Cole Information Services	
1992	pg A22	Cole Information Services	
1990	pg A25	Haines Criss-Cross Directory	
1985	-	Haines Criss-Cross Directory	Street not listed in Source
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
EUBANKS DR			
2013	pg. A2	Cole Information Services	
2008	pg. A4	Cole Information Services	
2003	pg. A10	Cole Information Services	
1999	pg. A14	Cole Information Services	
1995	pg. A19	Cole Information Services	
1992	pg. A23	Cole Information Services	
1990	pg. A26	Haines Criss-Cross Directory	
1985	pg. A28	Haines Criss-Cross Directory	
1980	-	Haines Criss-Cross Directory	Street not listed in Source
1975	-	Haines Criss-Cross Directory	Street not listed in Source
MIDWAY RD			
2013	pg. A3	Cole Information Services	
2008	pg. A5	Cole Information Services	
2003	pg. A11	Cole Information Services	
1999	pg. A15	Cole Information Services	
1995	pg. A20	Cole Information Services	
1992	pg. A24	Cole Information Services	
1990	pg. A27	Haines Criss-Cross Directory	
1985	pg. A29	Haines Criss-Cross Directory	
1980	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source
1975	-	Haines Criss-Cross Directory	Target and Adjoining not listed in Source

City Directory Images

Target Street	Cross Street	Source
✓	-	Cole Information Services

CROCKER DR 2013

301	VACAVILLE TRAILER SALES
400	BALL METAL BEVERAGE PACKAGING
700	FREIGHT HANDLERS
	SAVE MART SUPERMARKETS

Target Street	Cross Street	Source
-	✓	Cole Information Services

EUBANKS DR 2013

721	DISPLAY TECHNOLOGY
751	R & L WAREHOUSE DISTRIBUTION SERVICE
765	BETA LAYOUT INC
	FRESH CHOICE TOBACCO CO
	M & D CARPET
790	AUTOMATIC BAR CONTROLS INC
811	CLARK PEST CONTROL
820	BIO PLAS INC
	MASTER PLASTICS INC
	WULFF ELECTRIC
821	BLUE MOUNTAIN AIR INC
	DOW DIVERSIFIED INC
	FASTENAL
	LANDMARK IMAGE THE
830	RF BIOCIDICS INC
	VACAVILLE FRUIT CO
840	DEX PRODUCTS CORP
	JAK TRANSFER INC
871	CRYOGENIC TRANSPORTATION
	MG INDUSTRIES

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 2013

4609	KURT SOUZA
4615	S PORTER
4617	OCCUPANT UNKNOWN
4621	ALBERTO GOMEZ
4633	AMY BOWEN
	STEPHEN TRAFICANTE
4640	JAMES REA
4647	MARK FEASTER
4664	THOMAS HATTON
4665	JOHN ORTIZ
4677	ANDREA GRAVES
4681	KRISTIN ROYAL
4699	HARRY EVANS
	KENNETH WALLACE
	OCCUPANT UNKNOWN
4705	TORI RUSSELL
4715	AFFORDABLE LAWN SERVICE
	LEROY RUSSELL
4717	MICHAEL CAPOSSELA
4733	JEFFREY MATLOCK
4755	FLORENTINA VALDEZ
4767	OCCUPANT UNKNOWN
4783	OCCUPANT UNKNOWN
4819	OATES COUNTRY STORE
4823	JUDYS WILD WRANGLER SALOON
4933	FRANK GUERRERO
	MIDWAY RV PARK
	NORTH HILLS CHRISTIAN CHURCH
4985	GLENN WHITE
	VINEYARD RV PARK
5033	OCCUPANT UNKNOWN
5046	OCCUPANT UNKNOWN
5050	IGNACIO MARTINEZ
5062	TIM SASABUCHI
5063	FRED FINCH YOUTH CENTER
5064	BRIAN CAULFIELD
5084	RAY LEMEN
5086	SCOTT DEHERRERA
5093	JOSE BENAVIDES
5107	URIEL BARAJAS
5125	OCCUPANT UNKNOWN
5155	TONY CANEDO
5171	KERVYN MATTHEWS
5185	DEBORAH SMITH
5199	S&J JUMPS
	SOLOMON LOPEZ

Target Street	Cross Street	Source
-	✓	Cole Information Services

EUBANKS DR 2008

700	ALZA CAFE VACAVILLE
	ALZA CORP
	ARAMARK
	SKANSKA USA
721	AFRICAN ODYSSEY
	DISPLAY TECHNOLOGY INTERNATIONAL INC
	DTI
751	R & L WAREHOUSE DISTRIBUTION SERVICE
765	FRESH CHOICE TOBACCO CO
	M & D CARPETS
	SPRIG CIRCUIT INC
767	ACE DISTRIBUTION & LOGISTICS
	EXEL INC
790	AUTOMATIC BAR CONTROLS INC
	WUNDER BAR AUTOMATIC BAR CONTROL
811	CLARK PEST CONTROL OF STOCKTON INC
	DEPENDABLE HEATING & AIR
820	BIO PLAS INC
	BLESSING BASED MARKETING
	OCCUPANT UNKNOWN
830	CHERRY GLENN PRODUCE
	FARMERS FRUIT EXPRESS
	R2 ENGINEERING INC
	SUPERIOR SIGN SYSTEMS
	VACAVILLE FRUIT CO INC
840	CARAUSTAR INDUSTRIAL & CONSUMER PROD
	JAK TRANSFER INC
	SMURFIT STONE CONTAINER CORP
871	MESSER GRIESHEIM INDS
	MG INDUSTRIES
	TION CRYOGENIC TRANSPORTATION

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 2008

4609	KOMFORT FOODS
	KURT SOUZA
4615	AARON PORTER
4617	ANDREW PALMER
	PONY DREAMS
4621	ALBERTO GOMEZ
4633	STEPHEN TRAFICANTE
4640	KENNETH SENA
4647	MARK FEASTER
4664	TEH CONSTRUCTION
	THOMAS HATTON
4665	JOHN ORTIZ
4677	TIMOTHY NELSON
4681	JUAN LOMELI
4699	HARRY EVANS
	KENNETH WALLACE
	OCCUPANT UNKNOWN
4705	TORI RUSSELL
4715	BILLY STITH
4717	JOSHUA GOURDIN
4733	JEFFREY MATLOCK
4755	FLORENTINA VALDEZ
4767	NEAL MCCAULEY
4783	OCCUPANT UNKNOWN
4819	OATES COUNTRY STORE
4823	JUDYS WILD WRANGLER SALOON
4933	BRAD REID
	BRUCE TOWNSEND
	CAROL GROTE
	CHARLES GAST
	CHET BROWN
	CHRIS ADAM
	CHRISTINA BALL
	CLAUDE NEWMAN
	DAVID ROBERTS
	DAXTON NAVARRO
	DEAN STRAIGHT
	DEBBIE THERIAT
	DELBERT MCCUAN
	DONALD MCMANIS
	DONNA ROGERS
	FELIX AGUILAR
	FRANK GUERRERO
	FRANK MARTINEZ
	FRIEDA DIVEL
	GANDY DANCER RV PARK
	GARY WALLACE
	GREGORY WOOD
	HELEN PROUTY
	HERMAN FLICK

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 2008 (Cont'd)

4933	HUNDRUP JASON
	JAMES AUNE
	JAY WOODRUFF
	JEFFREY HOUSEMAN
	JENNIFER LUCIER
	JESSE NORFLEET
	JOAN KERNICK
	JODY WEEKS
	JOEL GARZA
	JOHN REYNOLDS
	JOSHUA STANLEY
	KATHLEEN GETTELMAN
	LINDA HANKS
	LOUISA BABCOCK
	MATTHEW WRIGHT
	MICHAEL FERRELL
	MICHELE BERGERON
	MIDWAY BUILDERS
	PAULA FLETCHER
	REGINA CROTZER
	RICHARD ERICKSON
	ROBERT MOORE
	ROBERT NICHOLS
	ROBERT SHELLY
	ROZANN PAGE
	SANDRA KRING
	SUSAN KNEER
	TERRY JENSEN
	WILLIAM GREENE
	WILLIAM PURSEL
4985	ANGELA GROVE
	B CRAMER
	BEVERLY KOLB
	BRIAN RICHERSON
	CARL MILLER
	DAVID BENNETT
	DAVID HARPER
	DONALD BUCKLE
	DONNA ANGLIM
	DREXEL SCOTT
	EDDIE CORPUZ
	FRANCIS WAGNER
	FRED RICHARDS
	FRED VOKAL
	GARRY CHATFIELD
	GARY WHEELER
	GLEN HAIGHT
	GLENN WHITE
	GROVER JAMISON
	HOWARD BROOKS

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 2008 (Cont'd)

4985	JAMES BLACKBURN
	JAMES FASSINGER
	JAMES FREEMAN
	JAMES GOULD
	JAMES HARKLESS
	JANET PATTON
	JASON TEMPLE
	JERRY BULL
	JERRY SHRINER
	JOSPEH PETERSON
	JOY PHILLIPS
	JUSTIN DISTON
	KEN PRESBA
	KEVIN GRUMBLING
	KRISTI POTTER
	KRISTINE BRUNS
	LEEANDRA SHAW
	LENORE MACE
	MARK WILSON
	MARY LESTER
	MIKE PEMBERTON
	N RHODES
	NANCY RILEY
	RAYMOND NELSON
	REBECCA STEFFANIC
	RICHARD CLARK
	RICHARD DRAKE
	ROBERT SORENSON
	SANDRA BAILEY
	SANDRA WADDINGHAN
	SANDY HOGE
	SHARON FAIR
	SHEILA LINKER
	VINCE PARKER
	VINEYARD R V PARK
	WENDELL CAUDILL
	WILLIAM AMBROSE
	WILLIAM BURN
	WILLIS WEBER
5033	JOHN AMATO
5046	FRED BUDERI
5050	MARRON LANDSCAPING HANDYMAN
	MELINA MENDOZA
5062	TIMOTHY SASABUCHI
5063	FRED FUBCG YOUTH CENTER
5064	OCCUPANT UNKNOWN
5084	DAVE LOZONNE ELECTRIC
	OCCUPANT UNKNOWN
5086	SCOTT DEHERRERA
5093	JOSE BENAVIDES

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 2008 (Cont'd)

5111	JUVENAL BARAJAS
5125	BILLY TAYLOR
5155	OCCUPANT UNKNOWN
5185	TED KNOTTS
5199	SOLOMON LOPEZ

Target Street	Cross Street	Source
✓	-	Cole Information Services

CROCKER DR 2003

400	OCCUPANT UNKNOWN
700	ALBERTSONS
	THOMAS MURPHY

Target Street	Cross Street	Source
-	✓	Cole Information Services

EUBANKS DR 2003

721	DISPLAY TECHNOLOGY INTL
	FRNTR OUT OF AFRC AFRCN ODYSY
	OCCUPANT UNKNOWN
	SCREEN LADIES
751	R & L WAREHOUSE
	WESTCOAST CO
771	BIO PLAS INC
	OCCUPANT UNKNOWN
790	AUTOMATIC BAR CONTROLS
	RICHARD MARTINDALE
811	HELEN HANSEN
820	MASTER PLASTICS INC
	WMI
830	ATE TOWER SERVICES INC
	R2 ENGINEERING INC
840	GUY WHALON
	JAK TRANSFER INC
	SMURFIT STONE CONTAINER CORP
871	CRYOGENIC TRANSPORTATION INC
	MESSER GRIESHEIM INDUSTRIES

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 2003

4609	KURT SOUZA
4615	PORTERS CLEANING SERVICE
	SHIRLEY PORTER
4617	BARBARA SCHMIDT
4621	ERNEST HERRICK
	HERRICK TRUCKING CO
4633	STEPHEN TRAFICANTE
4640	KENNETH SENA
4647	MARK FEASTER
4664	THOMAS HATTON
4665	JOHN ORTIZ
4677	TIMOTHY NELSON
4681	JOHN JACKSON
4685	JOHN ORTIZ
4699	KENNETH WALLACE
	OCCUPANT UNKNOWN
4705	STEVEN BAKER
4715	JOE CARLSON
4717	LINDA CARLSON
4733	JEFFREY MATLOCK
4755	JOSEPH VALDEZ
4767	NEAL MCCAULEY
4783	GREGORY BROSNAN
4819	MIDWAY FOODS INC
	OATES COUNTRY STORE
4823	JUDYS WILD WRANGLER SALOON
4881	WYNATHEN KETCHUM
4933	CAROL GROTE
	CHERL CUMMINS
	DAWN JENSON
	FRANK MARTINEZ
	GANDYDANCER RV PARK
	GARY WALLACE
	GREGORY WOOD
	HERMAN FLICK
	JENILLE ROBERTS
	JENNIFER LUCIER
	JESSE NORFLEET
	JOHN REYNOLDS
	KERRY BLUMER
	ROBERT SHELLY
	ROBERT WILLIAMSON
	ROBERT WILLSON
	ROBERT WILSON
	ROZANN PAGE
	TERRY JENSEN
	WILLIAM PURSEL
4985	ANDREW BARBEE
	DAVID HARPER
	DONNA ANGLIM

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 2003 (Cont'd)

4985	FRED RICHARDS
	G CHATFIELD
	GLEN HAIGHT
	GLORIA WOODS
	GREGORY ATCHISON
	IRENE EVANS
	JAMES FREEMAN
	JAMES GOULD
	JANET PATTON
	JOSPEH PETERSON
	JOY PHILLIPS
	JUSTIN DISTON
	LENORE MACE
	MAEN SADIK
	MARLON CRYER
	MIKE CLARK
	NANCY RILEY
	NEILS VINEYARD R V PARK
	ROBERT SORENSON
	ROD STARR
	SANDRA BAILEY
	V VANDERGAAG
	WILLIAM BURN
5033	CATSPURR INN
	JOHN AMATO
5046	MINDY COLEMAN
5050	CARLA LEAL
5062	ELIZABETH SASABUCHI
	STAR QUARTER HORSES
5063	HOWARD HAMILTON
	ROLAND PEREZ
5064	OCCUPANT UNKNOWN
5084	OCCUPANT UNKNOWN
5086	OCCUPANT UNKNOWN
5093	KIMBERLY SCURLOCK
5107	JOSEPH LITTLEJOHN
5125	BILLY TAYLOR
5155	ANTONIO CANEDO
5171	JANET BOTTOMS
5185	TED KNOTTS
5199	SOLOMON LOPEZ

Target Street	Cross Street	Source
✓	-	Cole Information Services

CROCKER DR 1999

400	3 BS WAREHOUSING & TRANSPORTATION
	KRAGEN AUTO PARTS
	NEW ROYAL TRADING CORPORATION
500	INTERNATIONAL HOME FOODS INCORPORATED
	TEAMSTERS CAN WORKERS & WAREHOUSEMAN UN LCL NO 857
700	LUCKY DISTRIBUTION CENTER

Target Street	Cross Street	Source
-	✓	Cole Information Services

EUBANKS DR 1999

700	ALZA CORPORATION
	MCCARTHY BROTHERS
721	UNITED STRUCTURE & SIGN
765	FULTON PACIFIC COMPANY
	SPRIG CIRCUITS
767	FRESENIUS USA INCORPORATED
790	AUTOMATIC BAR CONTROLS INCORPORATED
	WUNDER BAR
820	MASTER PLASTICS INCORPORATED
830	R2 ENGINEERING INCORPORATED
	SUPERIOR SIGN SYSTEMS
840	JAK TRANSFER INCORPORATED
	JEFFERSON SMURFIT INCORPORATED
871	M G INDUSTRIES INCORPORATED
	MG INDUSTRIES INCORPORATED

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 1999

4609	KURT SOUZA
	OCCUPANT UNKNOWN
4615	AARON PORTER
4617	OCCUPANT UNKNOWN
4621	ALBERTO GOMEZ
4633	STEPHEN TRAFICANTE
4640	KENNETH SENA
4647	MARK FEASTER
4664	OCCUPANT UNKNOWN
	THOMAS HATTON
4665	JOHN ORTIZ
4677	OCCUPANT UNKNOWN
	TIMOTHY NELSON
4681	BRADLEY CRANSTON
4699	HARRY EVANS
	KENNETH WALLACE
4705	TORI RUSSELL
4715	BILLY STITH
	JOE CARLSON
4755	FLORENTINA VALDEZ
4767	NEAL MCCAULEY
4819	OATES COUNTRY STORE
4823	JUDYS WILD WRANGLER SALOON
4933	BRAD REID
	BRUCE TOWNSEND
	CAROL GROTE
	CAROL MASON
	CHARLES GAST
	CHARLES GREEN
	CHARLES KIMMEL
	CHET BROWN
	CHRIS ADAM
	CHRISTINA BALL
	CLAUDE NEWMAN
	DAVID ROBERTS
	DEAN STRAIGHT
	DEBBIE THERIAT
	DELBERT MCCUAN
	DONNA ROGERS
	ERNIE SARDELLA
	FELIX AGUILAR
	FRANK GUERRERO
	GANDYDANCER RV PARK
	GARY WALLACE
	GREGORY WOOD
	H DUMAS
	HELEN PROUTY
	JAMES AUNE
	JAY WOODRUFF
	JEFFREY HOUSEMAN

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 1999 (Cont'd)

4933	JENNIFER LUCIER
	JESSE NORFLEET
	JOAN KERNICK
	JOEL GARZA
	JOHN REYNOLDS
	JOSHUA STANLEY
	KATHLEEN GETTELMAN
	LOUISA BABCOCK
	MATTHEW WRIGHT
	PAULA FLETCHER
	REGINA CROTZER
	RICHARD ERICKSON
	ROBERT MOORE
	ROBERT NICHOLS
	ROBERT SHELLY
	SAM HALEY
	SANDRA KRING
	SUSAN KNEER
	THOMAS SMITH
4985	ANGELA GROVE
	BEVERLY KOLB
	BRIAN RICHERSON
	CARL MILLER
	CHRIS BAXTER
	COLLINS HARRINGTON
	D BROOKS
	DAVID BENNETT
	DONALD BUCKLE
	DONNA ANGLIM
	DREXEL SCOTT
	EDDIE CORPUZ
	FRANCIS WAGNER
	FRANCISCO MELARA
	FRED VOKAL
	GLENN WHITE
	GROVER JAMISON
	JAMES BLACKBURN
	JAMES FASSINGER
	JAMES HALE
	JASON TEMPLE
	JERRY BULL
	JERRY SHRINER
	JOHN PORTER
	JOSPEH PETERSON
	JOY PHILLIPS
	KEN PRESBA
	KEVIN GRUMBLING
	KRISTI POTTER
	KRISTINE BRUNS
	LEEANDRA SHAW

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 1999 (Cont'd)

4985	MARK WILSON
	MARY LESTER
	MATTHEW TOM
	MICHAEL STUART
	N RHODES
	NANCY RILEY
	NEILS VINEYARD R V PARK
	NORM HERRINGSHAW
	RAYMOND NELSON
	REBECCA STEFFANIC
	RICHARD CLARK
	SANDRA BAILEY
	SANDRA WADDINGHAN
	SANDY HOGE
	SHARON FAIR
	T COLLINS
	VINEYARD R V PARK
5033	JOHN AMATO
5046	OCCUPANT UNKNOWN
5062	TIMOTHY SASABUCHI
5063	SIERRA CHILDRENS HOME
5084	DAVE LOZONNE
5086	SCOTT DEHERRERA
5093	JOSE BENAVIDES
5111	JUVENAL BARAJAS
5125	BILLY TAYLOR
5155	OCCUPANT UNKNOWN
5185	OCCUPANT UNKNOWN
	TED KNOTTS
5199	SOLOMON LOPEZ

Target Street	Cross Street	Source
✓	-	Cole Information Services

CROCKER DR 1995

500	AMERICAN HOME FOODS INC
	TEAMSTERS CANNERY NO 857
700	LUCKY DISTRIBUTION CTR

Target Street	Cross Street	Source
-	✓	Cole Information Services

EUBANKS DR 1995

700	ALZA CORP
751	WEST COAST BEAUTY SUPPLY
765	DUO PANE INDUSTRIES
	PACIFIC FLEXPAC
	SPRIG CIRCUITS
767	TRAMMELL CROW DIST CORP
790	AUTOMATIC BAR CONTROLS INC
820	FEDERATED TECHNOLOGIES
	MASTER PLASTICS INC
	WERNEKE & MULHERN INC
830	R 2 ENGINEERING INC
	STUART PETERSON INC
840	COR FAB INC

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 1995

4609	HOLSTEIN, MARY
4615	PORTER, ROBERT W
4621	HERRICK, ERNEST
4633	DAUBERT, CLAYTON H
4635	OCCUPANT UNKNOWNN
4640	OCCUPANT UNKNOWNN
4647	FEASTER, MARK
4664	AZEVEDO, WILLIAM E
4665	ORTIZ, JOHN
4676	MCCAULEY, NEAL R
4677	NELSON, PENNY
4681	JACKSON, JOHN R
4699	SCHRECKENGOST, LORENE
4705	OZUNA, FRANK C
4715	CARLSON, JOE P
4733	JEFFERS, TAMMY
4755	VALDEZ, JOSEPH
4767	MCCAULEY, NEAL R
4783	BROSNAN, GREG
4819	OATES COUNTRY STORE
4823	WILD OATES SALOON
4933	ERICKSON, PAM
	FROGGATT, NORM
	GANDYDANCER RV PARK
	GOLSON, SUSAN
	HILL, DENNIS
	LANGSTON, DONNA
	MEYERS, E
	NAVARRO, JUNE
	PAGE, THOMAS
	PAYNTER, RICHARD
	THERAULT, R H JR
4985	BRINKERHOFF, KURTIS
	GOULD, JAMES A
	MATHEWS, TIM
	MATTHEWS, TIM K
	MURRAY, MELODY
	NEILS VINETARD RV PARK
	WILLIAMS, DAVID
4995	OCCUPANT UNKNOWNN
5033	DYE, THOMAS J
5046	MAIERDONALDSON, J
	RAMALO QUARTER HORSES
5062	SASABUCHI, TIM
5063	HILL, BRIAN
	MCNARY, CONNIE
	WARD, JIM
5064	FROST, I A
5084	OCCUPANT UNKNOWNN
5086	WOLFE, DARYL

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 1995 (Cont'd)

5125	TAYLOR, BILLY G
5155	CANEDO, ANTONIO
5171	MOORE, WALTER J
5185	GREENE, NORVAL L

Target Street	Cross Street	Source
✓	-	Cole Information Services

CROCKER DR 1992

400	C&C ENTERPRISES
500	AMER HOME FOODS DIV
	TEAMSTERS CNNRY 857
700	LUCKY DISTBN CENTER

Target Street	Cross Street	Source
-	✓	Cole Information Services

EUBANKS DR 1992

700	ALZA CORP
751	WEST COAST BTY SPLY
761	AQUA MAGIC INC
	REED AUTOMTV SV EQP
	SHAW POOLS
765	DUO PANE INDUSTRIES
	PAC FLEXPAC
	SPRIG CIRCUITS
767	TRAMMELL CROW DIST
790	AUTOMTC BAR CONTRLS
820	MASTER PLASTICS INC
830	R 2 ENGINEERING INC
	STUART PETERSON INC
840	CORFAB INC
	JAK TRANSFER INC
871	LIQUID CARBONC INDS

Target Street	Cross Street	Source
-	✓	Cole Information Services

MIDWAY RD 1992

4615	PORTER, ROBERT W
4621	HERRICK, ERNEST
4635	GREGORICH, MIKE
	M A G CONSTRUCTION
4640	SENA, KENNETH D
4647	FEASTER, MARK
4665	ORTIZ, JOHN
4705	OZUNA, FRANK C
4733	SALAZAR, ELMER
4755	VALDEZ, JOSEPH
4767	MCCAULEY, NEAL R
4783	DRAPER, DAVID F
4819	OATES COUNTRY STORE
4823	WILD OATES SALOON
4933	GANDYDANCER RV PARK
	PAYNTER, RICHARD
4985	VINEYARD R V PARK
5063	HILL, BRIAN
	WARD, JIM
5086	WOLFE, DARYL

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

CROCKER DR 1990

CROCKER CIR (86) 94535 FAIRFIELD

TRAVIS A F B

2433	★NATL CAN CORP	437-6645	7
2500	★FRITO LAY INC	437-2100	6
	★FRITO LAY INC	437-9735	6

★ 3 BUS 0 RES 0 NEW

+CROCKER DR (90) 95688 VACAVILLE

400	★C&C ENTERPRISES	449-0676	+0
500	★AMER HOME FOODS DIV	448-8411	+0
	★TEAMSTERS CNNRY 857	448-8760	+0

★ 3 BUS 0 RES 3 NEW

CROCKER RD 95425 CLOVERDALE

495	REVELES Francisco	894-3851	2
824	LEAVITT Leota M	894-2069	
935	LINGNER David	894-2993	2

★ 0 BUS 3 RES 0 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

EUBANKS DR 1990

EUBANKS DR (84) 95688
VACAVILLE

700	★ALZA CORP	449-5400	+0
721	XXXX	00	
751	★WEST COAST BTY SPLY	447-8504	+0
	★WEST COAST BTY SPLY	447-5333	+0
761	★AQUA MGC CRPT CLNRS	448-0634	9
	★BAYWIND TRANSPRTN	446-2995	+0
	★DISASTER KLEENUP	448-0634	9
	★DUO PANE INDUSTRIES	449-4272	+0
	★SHAW POOLS	448-1414	+0
765	★BROADCAST BLDGS INC	446-4618	7
	★ELMIRA FABRICTN INC	448-7210	8
	★SARCAM INDUSTRIES	447-2237	+0
	★SPRIG CIRCUITS	447-7744	6
767	★TRAMMELL CROW DIST	448-3668	6
771	★OWENS ILLINOIS INC	447-4072	8
790	★AUTOMTC BAR CONTRLS	448-5151	8
820	XXXX	00	
830	★ALCO SEAT COVERS	449-4383	+0
	★R 2 ENGINEERING INC	448-7867	+0
840	XXXX	00	
871	★AMERIGASS AIR SPRTN	447-5753	+0
★	18 BUS 3 RES	10 NEW	

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

MIDWAY RD 1990

MIDWAY RD 95688
VACAVILLE

4522	BROWN Mary	446-8405	2
4524	XXXX	00	
4545	THOMAS Dallas J	448-8150	9
4547	PONCE Gabriel R	447-2018	7
4549	SURATOS Rodolfo C	446-4416	2
4550	XXXX	00	
4565	CARRIGAN Charles E	446-9581	9
4571	PARASIDE Peter	448-9779	2
4594	XXXX	00	
4609	XXXX	00	
4615	PORTER Robt W	446-3633	
4621	HERRICK Ernest	446-7348	
4633	GREGORICH Ray Sr	449-1944	+
4635	XXXX	00	
4640	SENA Kenneth D	446-9740	8
4647	FEASTER Mark	446-8123	+0
	FEASTER Mary	446-8123	+0
4664	XXXX	00	
4665	ORTIZ John	448-8084	3
4677	JENNINGS Melvin	448-6729	2
4681	JACKSON John R	446-1720	2
4699	XXXX	00	
4705	OZUNA Frank C	449-9212	9
4715	PYLE Bennie B	448-1953	
	★SACRAMENTO UNION	**447-0819**	2
	★VACAVILLE NEWS SRVC	**447-0819**	2
4727	XXXX	00	
4733	POTTS Frank B 3D	447-3159	+0
4755	VALDEZ Joseph	448-1793	
4767	MCCAULEY N R	446-7353	
4783	DRAPER David F	446-8316	
4819	**★OATES COUNTRY STORE**	**446-7371**	
4823	**★WILD OATES SALOON**	**447-5541**	
4837	XXXX	00	
4849	XXXX	00	
4933	**APARTMENTS**		
	BRETHERICK Ronald D	678-1092	
	★GANDYDANCER RV PARK	**446-7679**	
	KERR Daisy	678-2499	
	LUSTY Edward	678-2499	9
	MERRITT James R	678-3087	9
	MIDKIFF Walton E	678-0243	9
	POTTS Kennith	678-6125	9
	POTTS Mary	678-6125	9
	ROBERTS Julie	678-1321	7
	ROBERTS William	678-1321	
	THOMPSON B	678-0617	9
4933			
4985	**APARTMENTS**		
	DECKER Duane	678-3110	9
	HUSBAND Max	678-9782	8
	INGRAM Monte	678-3228	9
	REESOR Jeff	678-1189	9
	SIEVE Mike	678-4165	9
	STEELE Kenneth	678-5135	8
	STODDARD Gerald E	678-1304	
	STODDARD Margaret M	678-1304	
	★VINEYARD R V PARK	**447-8797**	5
	WALKER Charles E	678-6275	8
4985			
5033	DYER Wm R	447-1720	8
5046	**★RAMALO QRTR HORSES**	**447-7450**	6
5050	XXXX	00	
5063	HILL Brian	448-2873	
	HILL Feliz	448-2873	
	★SIERRA CHLDRNS HOME	**448-3557**	**+0**
	WARD Jim	448-2877	**+0**
5065	XXXX	00	
5086	WOLFE Barbara	447-8933	**+0**
	WOLFE Daryl	447-8933	**+0**
5171	MOORE M V	678-2571	2
5185	GREENE Norval	678-4082	6
5211	MOYNIHAN Harry P	448-3274	2
5233	XXXX	00	
5299	WOLFE Brent	678-5651	4
5303	LONG Don W	448-6654	3
5307	BENNET Rob M	448-6431	5
5315	KITTYLE Geo R	678-2483	3

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

EUBANKS DR 1985

EUBANKS DR 95688
VACAVILLE

721	BAKER HAMILTON DIV	447-3812	4
761	BROADCAST BUILDINGS	446-4618	4
	FOX A&A MTL PRDCT	446-7550	+5
	NORSE SYSTEMS INC	446-4017	+5
	SIERRA MOBILE HM SV	446-7550	4
F	ELMIRA FABRICATION	448-7210	4
765	AUTOMATIC BR CNTRLS	448-5151	+5
771	BERGEN BRUNSWIG CRP	447-4101	+5

★ 8 BUS 0 RES 4 NEW

Target Street	Cross Street	Source
-	✓	Haines Criss-Cross Directory

MIDWAY RD 1985

MIDWAY RD 95688
VACAVILLE

4522	BROWN MARY	446-8405	2
4524	XXXX	00	
4547	SPENGLER RICHARD	448-1890	2
4549	SURATOS RODOLFO C	446-4416	2
4550	HORTON SCOTT	448-6636	3
4565	XXXX	00	
4571	PARASIDE PETER	448-9779	2
4594	HEMMERT JACOB	448-9012	2
4609	XXXX	00	
4615	PORTER ROBT W	446-3633	2
4621	HIGGINS WN W	448-0463	2
4635	HUKILL W M	448-5233	2
4647	CARLSON LORAN	448-2057	+5
4664	LANDIS D L	446-4293	2
4665	ORTIZ JOHN	448-8084	3
4677	JENNINGS MELVIN	448-6729	2
4681	JACKSON JOHN R	446-1720	2
4699	CAMPBELL P L	448-8831	2
4715	PACINI DOROTHY A	448-1953	
	PYLE BENNIE B	448-1953	
	SACRAMENTO UNION	**447-0819**	2
	VACAVILLE NEWS SRVC	**447-0819**	2
4727	XXXX	00	
4767	MCCAULEY N R	446-7353	2
4783	DRAPER M F	446-8316	2
4819	**OATES COUNTRY STORE**	**446-7371**	2
4823	**WILD OATES SALOON**	**447-5541**	+5
4837	OBERMILLER LAWRENCE	446-8538	2
4849	DEVINE R D	447-7318	4
4933.....	APARTMENTS		
	BLANDINO AL	447-1568	+5
	COMPTON EILEEN	448-7542	+5
	GALL EUGEBE	447-6351	+5
	GALL EUGENE	447-6351	+5
	GANDYDANCER CMPGRN	**446-7679**	2
	KELLER COY	446-7335	+5
	LYCAN BARRY J	447-8239	+5
	RODGERS M A	446-7583	3
	STOCK LARRY	446-7290	+5
4933.....			
4985	BROWN WALTER E	448-5111	+5
	VINEYARD R V PARK	**447-8797**	+5
5033	DYER WILLIAM R	448-1893	2
	HAGERBAUMER J	447-0768	2
	MIDWAY SUPPLY	**448-1893**	+5
	VALLEY ROOFING	**447-6411**	+5
5050	MOBERG C L	448-7269	2
5063	HILL BRIAN	448-2873	3
5065	XXXX	00	
5185	GREENE NORVAL	448-9627	6
5211	MOYNIHAN HARRY P	448-3274	2
5233	SANDENO NORMAN E	448-6093	3
5303	LONG DON W	448-6654	3
5307	BENNET ROB M	448-6431	+5
5323	WINNEY MARK V	448-9765	4
5329	TROMPETER J	448-7677	2
5337	**CUSHING RBRT FSCPO**	**446-8018**	2
5457	KEIRSEY JOE	447-0386	2
NO #	AZEVEDO W E	448-9085	
NO #	**LUCKY DISTRIBTN CTR**	**446-7300**	9
★	10 BUS 48 RES	14 NEW	

Vacant Warehouse

700 Crocker Drive

Vacaville, CA 95688

Inquiry Number: 4956081.3

June 05, 2017

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

06/05/17

Site Name:	Client Name:
Vacant Warehouse	Stantec
700 Crocker Drive	3875 Atherton Rd
Vacaville, CA 95688	Rocklin, CA 95765
EDR Inquiry # 4956081.3	Contact: Danielle Manning

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Stantec 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 # BB47-425E-B91E

PO # NA

Project PN TBD

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 #: BB47-425E-B91E

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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Vacant Warehouse

700 Crocker Drive

Vacaville, CA 95688

Inquiry Number: 4956081.4

June 05, 2017

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

06/05/17

Site Name:	Client Name:
Vacant Warehouse	Stantec
700 Crocker Drive	3875 Atherton Rd
Vacaville, CA 95688	Rocklin, CA 95765
EDR Inquiry # 4956081.4	Contact: Danielle Manning

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Stantec were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		***Coordinates:***	
P.O.#	NA	**Latitude:**	38.410999 38° 24' 40" North
Project:	PN TBD	**Longitude:**	-121.948992 -121° 56' 56" West
		UTM Zone:	Zone 10 North
		UTM X Meters:	591759.51
		UTM Y Meters:	4251940.73
		Elevation:	108.00' above sea level

Maps Provided:

2012
1978
1973
1968
1953
1917
1908

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Allendale
2012
7.5-minute, 24000

1978 Source Sheets

Allendale
1978
7.5-minute, 24000
Aerial Photo Revised 1949

1973 Source Sheets

Allendale
1973
7.5-minute, 24000
Aerial Photo Revised 1973

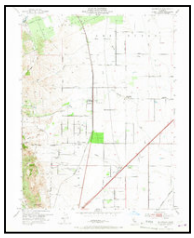
1968 Source Sheets

Allendale
1968
7.5-minute, 24000
Aerial Photo Revised 1968

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1953 Source Sheets



Allendale
1953
7.5-minute, 24000
Aerial Photo Revised 1949

1917 Source Sheets

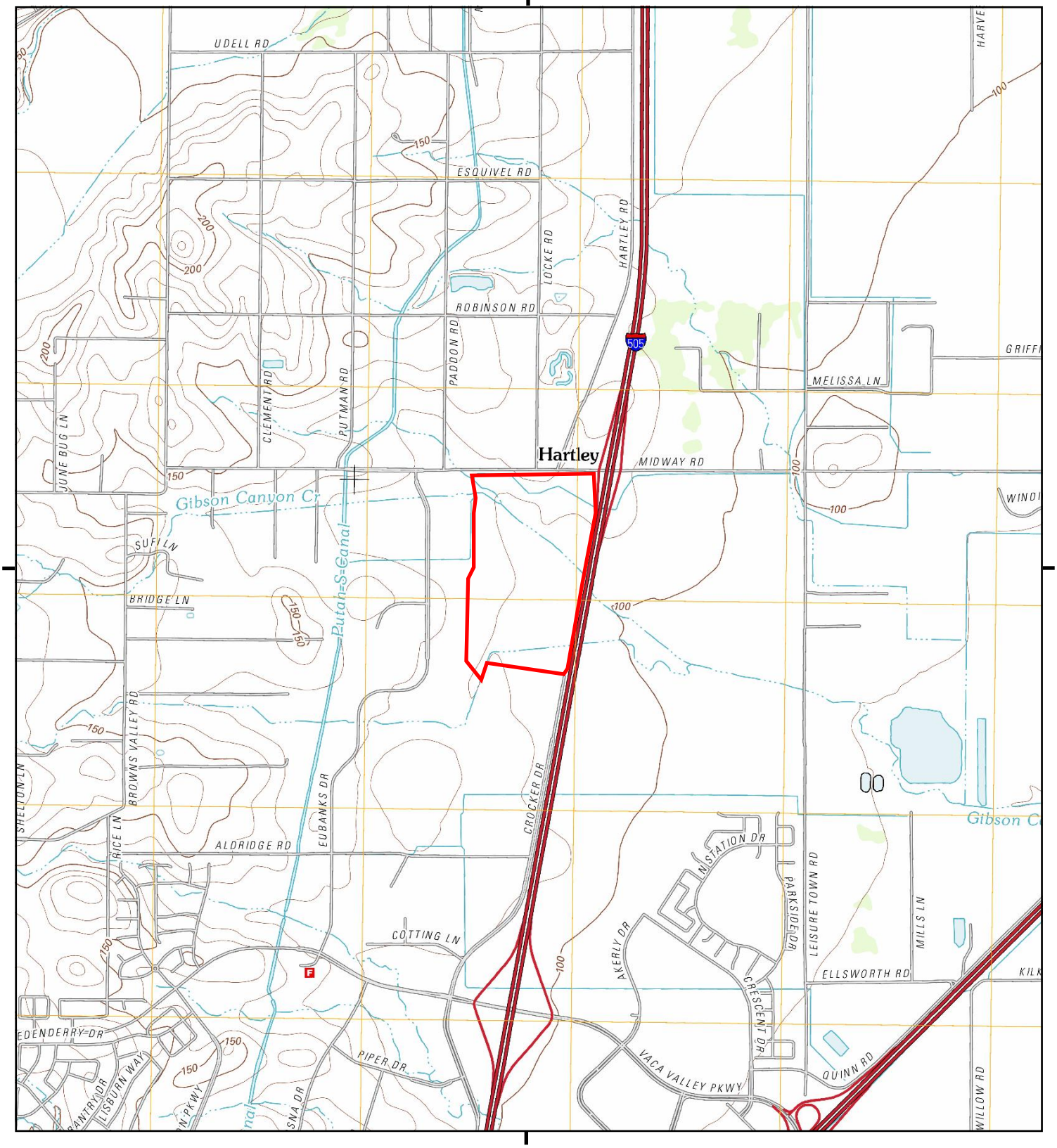
Wolfskill
1917
7.5-minute, 31680

1908 Source Sheets

Vacaville
1908
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

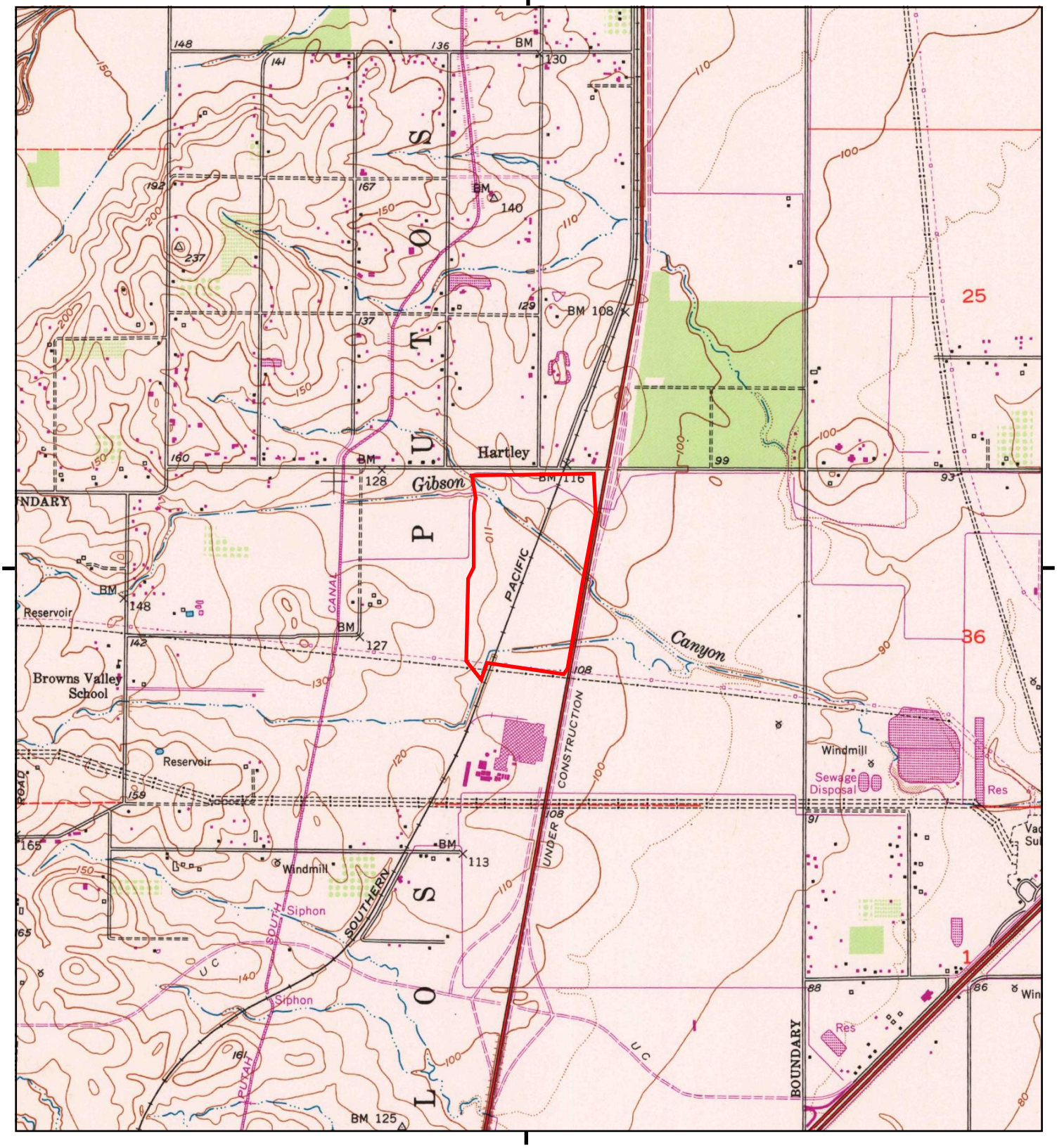
TP, Allendale, 2012, 7.5-minute

SITE NAME: Vacant Warehouse
ADDRESS: 700 Crocker Drive
Vacaville, CA 95688
CLIENT: Stantec

N

Historical Topo Map

1978



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

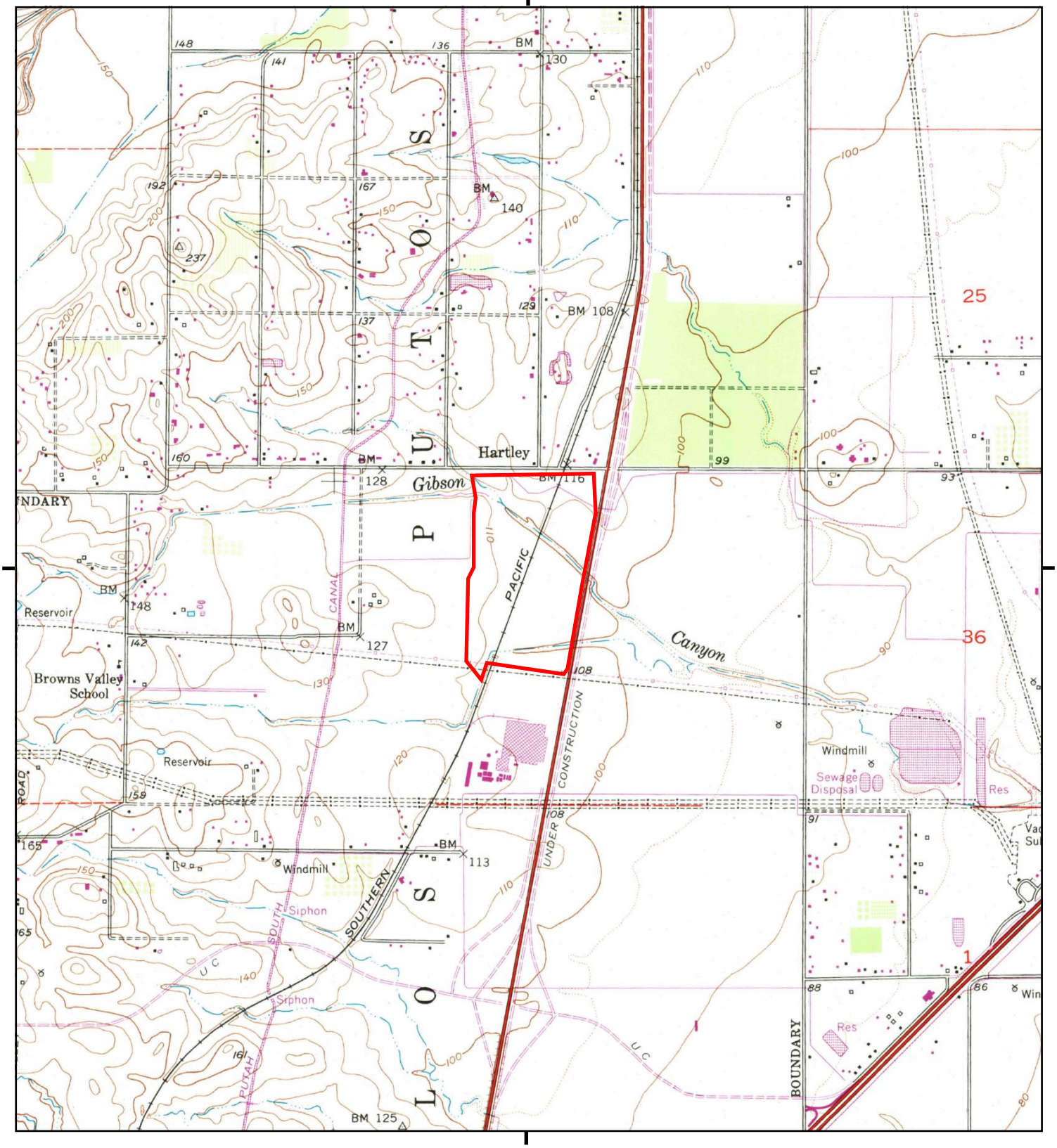
TP, Allendale, 1978, 7.5-minute

SITE NAME: Vacant Warehouse
ADDRESS: 700 Crocker Drive
Vacaville, CA 95688
CLIENT: Stantec

N

Historical Topo Map

1973



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

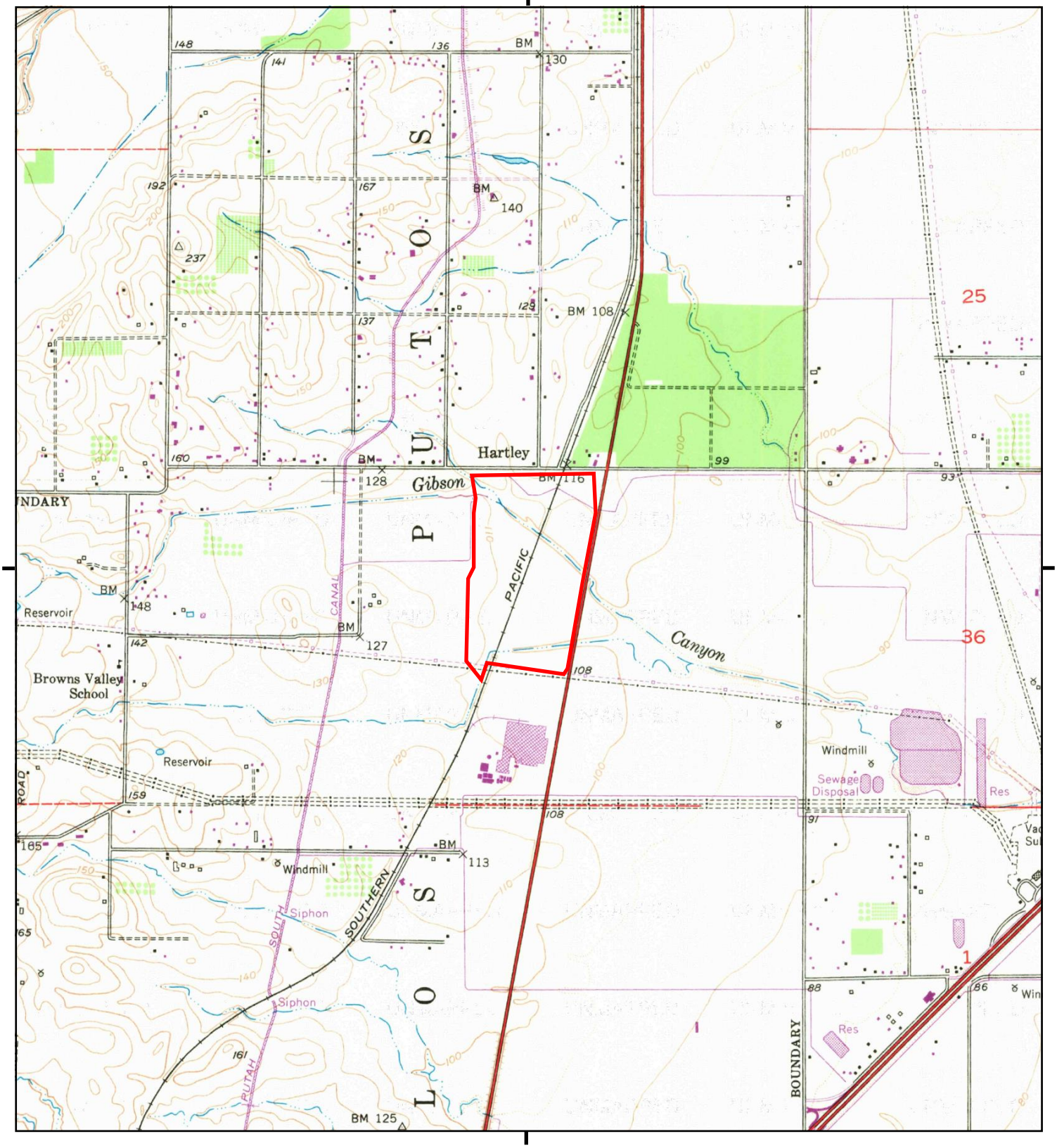
TP, Allendale, 1973, 7.5-minute

SITE NAME: Vacant Warehouse
ADDRESS: 700 Crocker Drive
Vacaville, CA 95688
CLIENT: Stantec

N

Historical Topo Map

1968



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

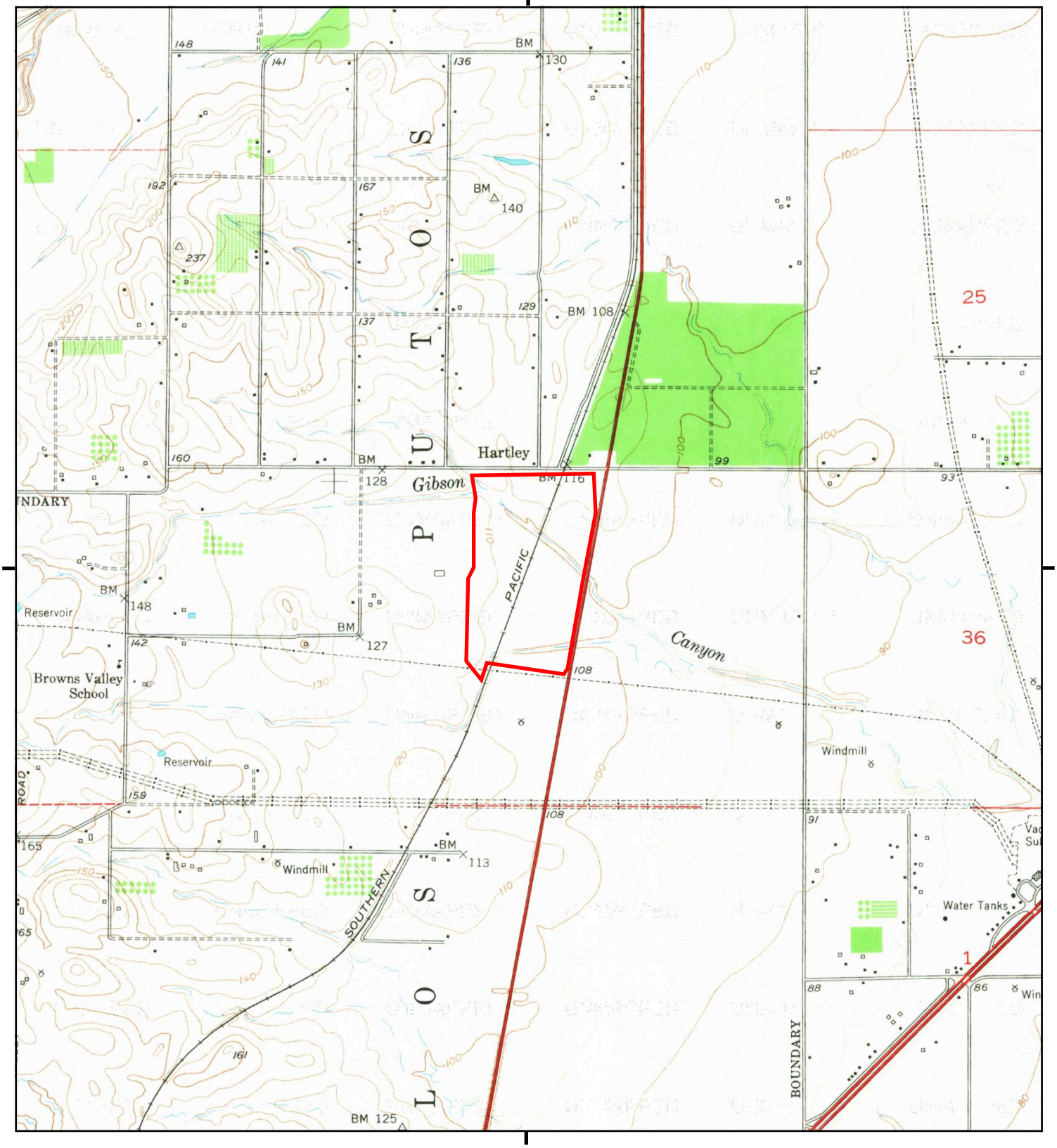
TP, Allendale, 1968, 7.5-minute

SITE NAME: Vacant Warehouse
ADDRESS: 700 Crocker Drive
Vacaville, CA 95688
CLIENT: Stantec

N

Historical Topo Map

1953



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

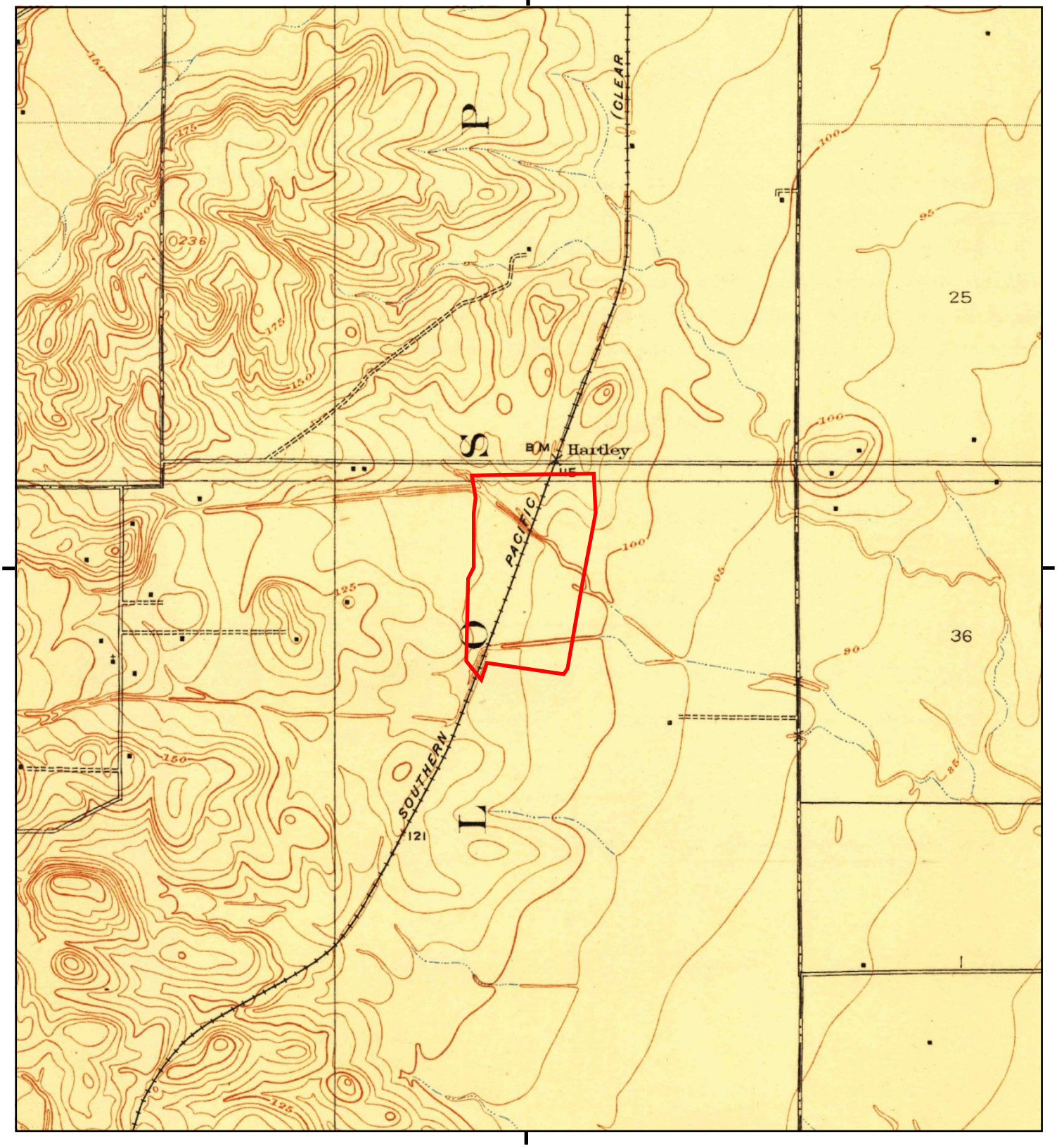
TP, Allendale, 1953, 7.5-minute

SITE NAME: Vacant Warehouse
ADDRESS: 700 Crocker Drive
Vacaville, CA 95688
CLIENT: Stantec

N

Historical Topo Map

1917



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

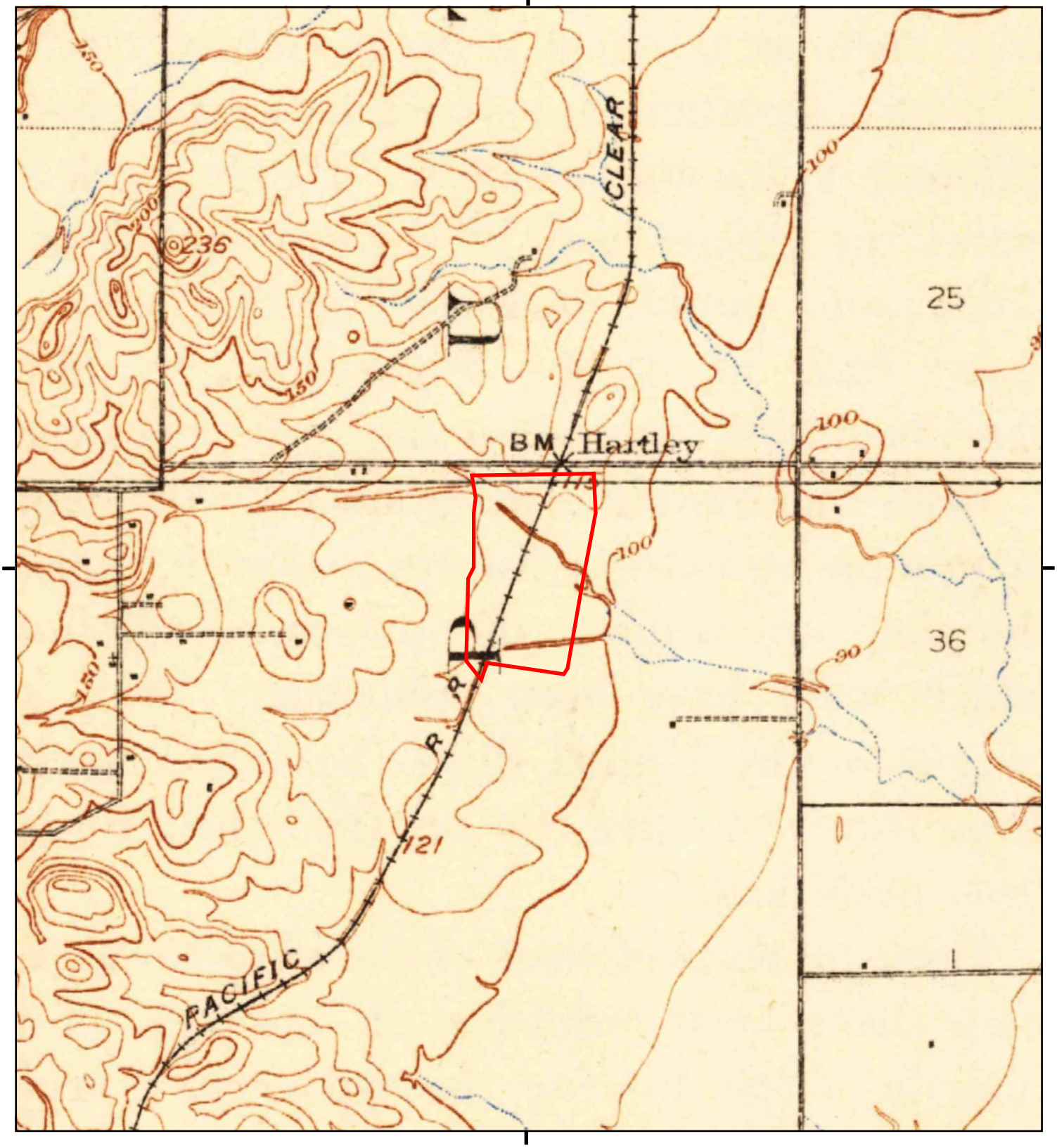
TP, Wolfskill, 1917, 7.5-minute

SITE NAME: Vacant Warehouse
ADDRESS: 700 Crocker Drive
Vacaville, CA 95688
CLIENT: Stantec

N

Historical Topo Map

1908



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Vacaville, 1908, 15-minute

SITE NAME: Vacant Warehouse
ADDRESS: 700 Crocker Drive
Vacaville, CA 95688
CLIENT: Stantec

N

Vacant Warehouse
700 Crocker Drive
Vacaville, CA 95688

Inquiry Number: 4956081.8
June 05, 2017

EDR Building Permit Report

Target Property and Adjoining Properties

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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About This Report

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Thank you for your business.
Please contact EDR at 1-800-352-0050
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EDR BUILDING PERMIT REPORT

About This Report

The EDR Building Permit Report provides a practical and efficient method to search building department records for indications of environmental conditions. Generated via a search of municipal building permit records gathered from more than 1,600 cities nationwide, this report will assist you in meeting 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), or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

Building permit data can be used to identify current and/or former operations and structures/features of environmental concern. The data can provide information on a target property and adjoining properties such as the presence of underground storage tanks, pump islands, sumps, drywells, etc., as well as information regarding water, sewer, natural gas, electrical connection dates, and current/former septic tanks.

ASTM and EPA Requirements

ASTM E 1527-13 lists building department records as a "standard historical source," as detailed in § 8.3.4.7: "Building Department Records - The term building department records means those records of the local government in which the property is located indicating permission of the local government to construct, alter, or demolish improvements on the property." ASTM also states that "Uses in the area surrounding the property shall be identified in the report, but this task is required only to the extent that this information is revealed in the course of researching the property itself."

EPA's Standards and Practices for All Appropriate Inquires (AAI) states: "§312.24: Reviews of historical sources of information. (a) Historical documents and records must be reviewed for the purposes of achieving the objectives and performance factors of §312.20(e) and (f). Historical documents and records may include, but are not limited to, aerial photographs, fire insurance maps, building department records, chain of title documents, and land use records."

Methodology

EDR has developed the EDR Building Permit Report through our partnership with BuildFax, the nation's largest repository of building department records. BuildFax collects, updates, and manages building department records from local municipal governments. The database now includes 30 million permits, on more than 10 million properties across 1,600 cities in the United States.

The EDR Building Permit Report comprises local municipal building permit records, gathered directly from local jurisdictions, including both target property and adjoining properties. Years of coverage vary by municipality. Data reported includes (where available): date of permit, permit type, permit number, status, valuation, contractor company, contractor name, and description.

Incoming permit data is checked at seven stages in a regimented quality control process, from initial data source interview, to data preparation, through final auditing. To ensure the building department is accurate, each of the seven quality control stages contains, on average, 15 additional quality checks, resulting in a process of approximately 105 quality control "touch points."

For more information about the EDR Building Permit Report, please contact your EDR Account Executive at (800) 352-0050.

EDR® Environmental Data Resources Inc

BUILD FAX® PROPERTY HISTORY

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

A search of building department records was conducted by Environmental Data Resources, Inc (EDR) on behalf of Stantec on Jun 05, 2017.

TARGET PROPERTY

700 Crocker Drive
Vacaville, CA 95688

SEARCH METHODS

EDR searches available lists for both the Target Property and Surrounding Properties.

RESEARCH SUMMARY

Building permits identified: **YES**

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.

Vacaville

Year	*Source*	*TP*	*Adjoining*
2017	City of Vacaville, Building Permits		
2016	City of Vacaville, Building Permits		
2015	City of Vacaville, Building Permits	X	
2014	City of Vacaville, Building Permits		
2013	City of Vacaville, Building Permits	X	
2012	City of Vacaville, Building Permits	X	
2011	City of Vacaville, Building Permits		
2010	City of Vacaville, Building Permits	X	
2009	City of Vacaville, Building Permits		
2008	City of Vacaville, Building Permits		
2007	City of Vacaville, Building Permits	X	
2006	City of Vacaville, Building Permits	X	
2005	City of Vacaville, Building Permits		
2004	City of Vacaville, Building Permits		
2003	City of Vacaville, Building Permits		
2002	City of Vacaville, Building Permits		
2001	City of Vacaville, Building Permits	X	
2000	City of Vacaville, Building Permits	X	
1999	City of Vacaville, Building Permits	X	
1998	City of Vacaville, Building Permits	X	
1997	City of Vacaville, Building Permits		
1996	City of Vacaville, Building Permits		
1995	City of Vacaville, Building Permits		
1994	City of Vacaville, Building Permits		
1993	City of Vacaville, Building Permits		
1992	City of Vacaville, Building Permits		
1991	City of Vacaville, Building Permits		
1990	City of Vacaville, Building Permits	X	

EXECUTIVE SUMMARY: SEARCH DOCUMENTATION

Year	Source	TP	Adjoining
1989	City of Vacaville, Building Permits	X	

BUILDING DEPARTMENT RECORDS SEARCHED

Name: Vacaville
Years: 1989-2017
Source: City of Vacaville, Building Permits, VACAVILLE, CA
Phone: (707) 449-5152

Name: Fairfield
Years: 2014-2017
Source: City of Fairfield, Community Development, Building Department, Fairfield, CA
Phone: (707) 428-7458

Name: Redding
Years: 1987-2017
Source: City of Redding, Development Services, Building Division, Redding, CA
Phone: 530-225-4014

TARGET PROPERTY FINDINGS

TARGET PROPERTY DETAIL

700 Crocker Drive
Vacaville, CA 95688

700 CROCKER DR

Date:	**1/22/2015**
Permit Type:	
Description:	**SAVEMART DISTRIBUTION - NEW TP...**
Permit Description:	**REROOF NON-RESIDENTIAL**
Work Class:	
Proposed Use:	
Permit Number:	1501-0153
Status:	
Valuation:	$0.00
Contractor Company:	
Contractor Name:	PRIORITY ROOFING SOLUTIONS INC

Date:	**12/23/2013**
Permit Type:	**NON-RESIDENTIAL**
Description:	**SEWER REPAIR FROM GUARD SHAKE TO MAIN SEWER LINE**
Permit Description:	**SEWER LINE REPAIR/REPLACEMENT ...**
Work Class:	
Proposed Use:	
Permit Number:	13120157
Status:	
Valuation:	$0.00
Contractor Company:	
Contractor Name:	AARON PLUMBING

TARGET PROPERTY FINDINGS

Date: **6/26/2013**
Permit Type: **NON-RESIDENTIAL**
Description: **REPLACE 2 ROOF TOP PACKAGE UNITS**

Permit Description: **HVAC REPLACEMENT NON-RESIDENTI...**
Work Class:
Proposed Use:
Permit Number: 13050269
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: DE HART PLUMBING,HEATING,AIR

Date: **1/22/2013**
Permit Type: **NON-RESIDENTIAL**
Description: **REPAIR SEWER LINE**

Permit Description: **SEWER LINE REPAIR/REPLACEMENT ...**
Work Class:
Proposed Use:
Permit Number: 13010127
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: AARON PLUMBING

Date: **5/8/2012**
Permit Type: **NON-RESIDENTIAL**
Description: **REPAIR SEWER LINE FROM GUARD SHACK**

Permit Description: **SEWER LINE REPAIR/REPLACEMENT ...**
Work Class:
Proposed Use:
Permit Number: 12050054
Status: INSPECTION PHASE
Valuation: $0.00
Contractor Company:
Contractor Name: AARON PLUMBING

TARGET PROPERTY FINDINGS

Date: **11/16/2010**
Permit Type: **NON-RESIDENTIAL**
Description: **ENCLOSE 4170SF OF WAREHOUSE AREA W/ CHAINLINK FENCE- AEROSOL**

Permit Description: **ALTERATION/REMODEL NON-RESIDEN...**
Work Class:
Proposed Use:
Permit Number: 10110027
Status: FINALED
Valuation: $0.00
Contractor Company:
Contractor Name:

Date: **1/16/2007**
Permit Type:
Description:

Permit Description: **HVAC REPLACEMENT NON-RESIDENTI...**
Work Class:
Proposed Use:
Permit Number: 07010095
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: UTECHT INC

Date: **12/11/2006**
Permit Type:
Description:

Permit Description: **PLUMBING MISCELLANEOUS NON-RES...**
Work Class:
Proposed Use:
Permit Number: 06120054
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: TITAN PLUMBING DBA: D & D

TARGET PROPERTY FINDINGS

Date: **2/14/2001**
Permit Type:
Description:

Permit Description: **ALTERATION/REMODEL NON-RESIDEN...**
Work Class:
Proposed Use:
Permit Number: 01010155
Status:
Valuation: $0.00
Contractor Company:
Contractor Name:

Date: **9/15/2000**
Permit Type:
Description:

Permit Description: **ALTERATION/REMODEL NON-RESIDEN...**
Work Class:
Proposed Use:
Permit Number: 00090035
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: SAHARGUN PLUMBING, INC

Date: **7/19/1999**
Permit Type:
Description: **ALTERATION TO OFFICE AREA INCL...**

Permit Description: **ALTERATION/REMODEL NON-RESIDEN...**
Work Class:
Proposed Use:
Permit Number: 99060046
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: PEACOCK CONSTRUCTION

TARGET PROPERTY FINDINGS

Date: **7/23/1998**
Permit Type:
Description: **INSTALL STOAGE RACKS AND CHECK...**

Permit Description: **ALTERATION/REMODEL NON-RESIDEN...**
Work Class:
Proposed Use:
Permit Number: 98070145
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: FRAZIER INDUSTRIAL CO

Date: **4/16/1990**
Permit Type:
Description: **ADDITION TO TIRE REPAIR BUILDI...**

Permit Description: **ADDITION NON-RESIDENTIAL**
Work Class:
Proposed Use:
Permit Number: 90030093
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: SOLANO CONTRUCTION

Date: **12/11/1989**
Permit Type:
Description: **ADD WALL IN DISPATCH OFFICE**

Permit Description: **ALTERATION/REMODEL NON-RESIDEN...**
Work Class:
Proposed Use:
Permit Number: 89120032
Status:
Valuation: $0.00
Contractor Company:
Contractor Name: MR B L D CONTRACTING SVCS INC

TARGET PROPERTY FINDINGS

Date:
Permit Type:
Description:

Permit Description: **ALTERATION/REMODEL NON-RESIDEN...**
Work Class:
Proposed Use:
Permit Number: 90120178
Status:
Valuation: $0.00
Contractor Company:
Contractor Name:

ADJOINING PROPERTY FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

No Permits Found

GLOSSARY

General Building Department concepts

- **ICC:** The International Code Council. The governing body for the building/development codes used by all jurisdictions who've adopted the ICC guidelines. MOST of the US has done this. Canada, Mexico, and other countries use ICC codes books and guides as well. There are a few states who have added guidelines to the ICC codes to better fit their needs. For example, California has added seismic retrofit requirements for most commercial structures.
- **Building Department (Permitting Authority, Building Codes, Inspections Department, Building and Inspections):** This is the department in a jurisdiction where an owner or contractor goes to obtain permits and inspections for building, tearing down, remodeling, adding to, re-roofing, moving or otherwise making changes to any structure, Residential or Commercial.
- **Jurisdiction:** This is the geographic area representing the properties over which a Permitting Authority has responsibility.
- **GC:** General Contractor. Usually the primary contractor hired for any Residential or Commercial construction work.
- **Sub:** Subordinate contracting companies or subcontractors. Usually a "trades" contractor working for the GC. These contractors generally have an area of expertise in which they are licensed like Plumbing, Electrical, Heating and Air systems, Gas Systems, Pools etc. (called "trades").
- **Journeymen:** Sub contractors who have their own personal licenses in one or more trades and work for different contracting companies, wherever they are needed or there is work.
- **HVAC (Mechanical, Heating & Air companies):** HVAC = Heating, Ventilation, and Air Conditioning.
- **ELEC (Electrical, TempPole, TPole, TPower, Temporary Power, Panel, AMP Change, Power Release):** Electrical permits can be pulled for many reasons. The most common reason is to increase the AMPs of power in an electrical power panel. This requires a permit in almost every jurisdiction. Other commons reason for Electrical permits is to insert a temporary power pole at a new construction site. Construction requires electricity, and in a new development, power has yet to be run to the lot. The temporary power pole is usually the very first permit pulled for new development. The power is released to the home owner when construction is complete and this sometimes takes the form of a Power Release permit or inspection.
- **"Pull" a permit:** To obtain and pay for a building permit.
- **CBO:** Chief Building Official
- **Planning Department:** The department in the development process where the building /structural plans are reviewed for their completeness and compliance with building codes
- **Zoning Department:** The department in the development process where the site plans are reviewed for their compliance with the regulations associated with the zoning district in which they are situated.
- **Zoning District:** A pre-determined geographic boundary within a jurisdiction where certain types of structures are permitted / prohibited. Examples are Residential structure, Commercial/Retail structures, Industrial/Manufacturing structures etc. Each zoning district has regulations associated with it like the sizes of the lots, the density of the structures on the lots, the number of parking spaces required for certain types of structures on the lots etc.
- **PIN (TMS, GIS ID, Parcel#):** Property Identification Number and Tax Map System number.
- **State Card (Business license):** A license card issued to a contractor to conduct business.
- **Building Inspector (Inspector):** The inspector is a building department employee that inspects building construction for compliance to codes.
- **C.O.:** Certificate of Occupancy. This is the end of the construction process and designates that the owners now have permission to occupy a structure after its building is complete. Sometimes also referred to as a Certificate of Compliance.

GLOSSARY

Permit Content Definitions

- Permit Number: The alphanumerical designation assigned to a permit for tracking within the building department system. Sometimes the permit number gives clues to its role, e.g. a "PL" prefix may designate a plumbing permit.
- Description: A field on the permit form that allows the building department to give a brief description of the work being done. More often than not, this is the most important field for EP's to find clues to the prior use(s) of the property.
- Permit Type: Generally a brief designation of the type of job being done. For example BLDG-RES, BLDG-COM, ELEC, MECH etc.

Sample Building Permit Data

Date: Nov 09, 2000
Permit Type: Bldg -
New Permit Number: 101000000405
Status: Valuation: $1,000,000.00
Contractor Company: OWNER-BUILDER
Contractor Name:

Description: New one store retail (SAV-ON) with drive-thru pharmacy. Certificate of Occupancy.

Appendix J, Table: 3.10-1: General Plan Consistency Analysis

Goal, Policy, or Action	Consistency Determination
Land Use Element	
Goal LU-1: Preserve, promote, and protect the existing character and quality of life within Vacaville.	**Consistent.** The proposed project is intended to provide a high-quality, well-planned warehouse development on land zoned for industrial development. Adequate landscape buffers would be provided to shield the residential uses to the north. These elements would be consistent with the policy of preserving and protecting existing character.
Policy LU-P1.1: Maintain Vacaville as a free-standing community surrounded by foothills, farmland, and other open space.	**Consistent.** The project site is zoned for industrial development and would not impact farmlands or open areas. The proposed warehouse would create jobs for the local population and maintain the job/housing balance in the city.
Policy LU-P1.2: Protect Vacaville's natural environment. Integrate creeks, hills, utility corridors, and other significant natural features into major development plans.	**Consistent.** Internal access roads would cross Gibson Canyon Creek. Road construction would be subject to approval of Clean Water Act 401 and 404 and LSAA permits and implementation of mitigation measures. Relocation of the SID Canal in a new ROW would be in accordance with applicable mitigation measures. Refer to Section 3.4, Biological Resources, for further discussion.
Policy LU-P1.4: Protect established neighborhoods from incompatible uses.	**Consistent.** The proposed project would include landscaping along the frontage of Midway Road to shield the residential uses to the north.
Policy LU-P1.8: Design aesthetically pleasing roadways using trees or other appropriate landscaping.	**Consistent.** The proposed project would include landscaping along the frontage of Midway Road to create an aesthetically pleasing roadway. Landscaping would also include plants along entrances and parking lot islands.
Goal LU-2: Carefully plan for new development in undeveloped portions Vacaville.	**Consistent.** The project site is undeveloped but is zoned for industrial development and is well supported by infrastructure. The proposed project would not induce growth.
Goal LU-3: Coordinate land development with the provision of services and infrastructure.	**Consistent.** Utility improvements for the Interchange Business Park Policy Plan area, which are separate from the proposed project, are underway. Other utility improvements associated with the proposed project would be concurrent with the construction of the proposed project. Refer to Section 2.0, Project Description, for further discussion.
Policy LU-P3.2 Manage growth so that the quantity and quality of public services and utilities provided to existing businesses and residents will not drop below required levels of service because of new development, except when required findings related to levels of service are made. While existing development bears some responsibility to fund improvements that will resolve such deficits, ensure that new development also funds its fair share of the costs of maintenance and depreciation of facilities.	**Consistent.** The project site and utilities have already been planned for as part of the Interchange Business Park Policy Plan area. The proposed project would be adequately served by existing facilities as well as by facilities currently being constructed, as discussed in Section 2.0, Project Description.

Goal, Policy, or Action	Consistency Determination
Policy LU-P3.3: Provide urban services in accordance with the May 1995 City of Vacaville/Solano Irrigation District Master Water Agreement, as it may be amended from time to time.	**Consistent.** The project site and utilities have already been planned for as part of the Interchange Business Park Policy Plan. The proposed project would be adequately served by existing facilities as well as by facilities currently being constructed, as discussed in Section 2.0, Project Description.
Policy LU-P3.4: Do not approve new development unless there is infrastructure in place or planned to support the growth.	**Consistent.** As discussed in Section 2.0, Project Description, utility improvements are underway for the Interchange Business Park Policy Plan area to provide adequate capacities for the proposed project. No building permits would be issued until necessary infrastructure is available to serve the proposed project.
Policy LU-P3.5: Encourage new development to consider transit, pedestrian, and bicycle circulation during the design phase.	**Consistent.** The project site is not served by any transit services. However, the proposed project design would include a bicycle rack near each building entrance on the north and south sides of the buildings. The proposed project would therefore be consistent with this policy.
Policy LU-P3.6: Require that new development or new Specific Plan areas be located immediately adjacent to existing development or infrastructure.	**Consistent.** The proposed project would be located north of existing commercial/industrial uses and would connect to the existing utilities. As discussed in Section 2.0, Project Description, some utility improvements are underway for the Interchange Business Park Policy Plan area to provide adequate capacities to serve the proposed project.
Goal LU-5: Maintain the City's Urban Growth Boundary.	**Consistent.** The project site is located within the City's Urban Growth Boundary on parcels planned for industrial land uses.
Goal LU-6: All development shall pay its own way and not result in a financial burden to existing development or services.	**Consistent.** The Applicant would pay all development fees per the City's Municipal Code Section 11.01.
Policy LU-P6.1: Require that all development mitigate its own impacts on the existing community and pay its fair share of the cost of capital improvements needed to serve that development.	**Consistent.** The ISMND analysis includes mitigation measures where necessary for development of the proposed project. In addition, the Applicant would pay all development fees per the City's Municipal Code Section 11.01.
Goal LU-7: Promote public participation in the City's planning processes.	**Consistent.** This ISMND would be available for a 30-day public review period in accordance with CEQA Guidelines Section 15105.
Policy LU-P7.1: Provide opportunities for individuals, organizations, and neighborhood associations to participate in the planning process.	**Consistent.** This ISMND would be available for a 30-day public review period. The City as the Lead Agency would provide notification to the public concerning the review period in accordance with CEQA Guidelines Section 15072.
Policy LU-P7.3: Require that sponsors of new development projects have early and frequent communication with affected citizens and stakeholders.	**Consistent.** Planning sent an administrative hearing notice to property owners and occupants within 300 feet of the project site. The City held a meeting at the Planning office on March 19, 2018. Only interested union representatives and the Applicant attended the March 19, 2018 meeting.
Policy LU-P8.5: Work with Solano County and the Nut Tree Airport to ensure Vacaville's future	**Consistent.** The proposed project is located about 2 miles north of the Nut Tree Airport and does not lie within its influence area.

Goal, Policy, or Action	Consistency Determination
development patterns and character do not adversely impact the Nut Tree Airport.	
Goal LU-15: Promote the development of attractive industrial areas and uses that provide jobs to Vacaville residents.	**Consistent.** The proposed project is intended to provide a high-quality, well-planned warehouse development with an adequate landscape buffer to shield the residential uses to the north. The proposed warehouse would create jobs for the local population and maintain the job/housing balance in the City.
Policy LU-P15.3: Encourage clustering of industrial development.	**Consistent.** The proposed project would be located north of existing industrial uses that include the former SaveMart Distribution Center and the Mariani Packing Facility. The proposed project is planned as a cluster of three single-story buildings and associated landscaping on both sides of Gibson Canyon Creek.
Policy LU-P15.4: Protect existing and new residential areas from adverse effects of new industry and, wherever feasible, of existing industry.	**Consistent.** The proposed project is intended to provide a high-quality, well-planned warehouse development. Landscaping would be planted along Midway Road to shield the residential uses to the north.
Policy LU-P15.5: Require that new industrial development be designed to avoid adverse impacts to adjacent non-industrial uses, particularly residential neighborhoods, with respect to, but not limited to, noise, dust and vibration, water quality, air quality, agricultural resources, and biological resources. Include specific standards in Policy Plans for adequate physical and aesthetic separation of industrial business parks and residential land.	**Consistent.** This ISMND identifies necessary mitigation measures for impacts to aesthetics, air quality, biological resources, cultural resources, geology and soils, greenhouse gases, hazards and hazardous materials, hydrology and water quality, noise, and tribal cultural resources. The implementation of these mitigation measures would be consistent with the objective of protecting adjacent land uses.
Policy LU-P15.6: Require increased setbacks adjoining freeways and ensure that new developments do not appear to back up to freeways.	**Consistent.** This proposed project would include at least 40-foot setbacks from I-505 as required by the Interchange Business Park Policy Plan development standards and would not appear to back up to the freeway.
Goal LU-27: Ensure that development near the Nut Tree Airport and Travis Air Force Base is compatible with airport uses and conforms to safety requirements.	**Consistent.** The proposed project is not within the influence area of either the Nut Tree Airport or Travis Air Force Base. The proposed building heights would not result in safety hazards to airport operations.
Policy LU-P27.3: Ensure that land uses in the vicinity of Nut Tree Airport, or potentially affected by Travis Air Force Base, are compatible with airport operations and are consistent with the Airport Land Use Compatibility Plans for both airports.	**Consistent.** The proposed project is located about 9 miles north of the Travis Air Force Base and does not lie within its influence area.
Policy LU-P27.4: Encourage uses that are compatible with the noise, air quality, and traffic impacts associated with airports, such as aviation-oriented commercial and industrial uses, to be located near the Nut Tree Airport whenever possible.	**Consistent.** The project site does not lie within an influence area of any airport. The proposed project would be an industrial use and would be compatible with airport-related operations.
Transportation Element	
Goal TR-3: Provide roadway capacity for typical weekday peak hour (7:00 to 9:00 AM and 4:00 to 6:00 PM) traffic volumes without significant delay.	**Consistent.** The project site does not lie within the influence area of any airport. The proposed

Goal, Policy, or Action	Consistency Determination
	project would be an industrial use and would be compatible with airport-related operations.
Policy TR-P3.1: Strive to maintain LOS C as the LOS goal at all intersections and interchanges to facilitate the safe and efficient movement of people, goods, and services. Design improvements to provide LOS C conditions based on the City's most recent 20+ year traffic forecast. At unsignalized intersections, maintain an overall LOS C standard with the worst approach to the intersection not exceeding LOS D.	**Consistent.** This ISMND's traffic analysis assesses traffic operations using the City's established LOS standards. The traffic analysis determined that the proposed project would not cause significant impacts related to traffic delays at any of the study locations. A continuous two-way left turn lane is recommended to improve safety at the project driveways. Refer to Section 3.16, Transportation and Traffic, for further discussion.
Goal TR-4: Mitigate traffic impacts from new development.	**Consistent.** This ISMND's traffic analysis determined that the proposed project would not cause significant traffic impacts that would require mitigation. A continuous two-way left turn lane is recommended to improve safety at the project driveways. Refer to Section 3.16, Transportation and Traffic, for further discussion.
Policy TR-P4.2: As part of development approvals, require reasonable demonstration that traffic improvements necessary to mitigate development in accordance with Policies TR-3.1 through TR-3.3 will be in place in time to accommodate trips generated by the project, or satisfy findings identified in Policies TR-3.4 and TR-3.5.	**Consistent.** The proposed project would include widening of the Midway Road eastbound lane by 9.5 feet to accommodate the three new driveways and allow for a two-way left turn lane. Refer to Section 2.0, Project Description, for further discussion.
Goal TR-12: Maintain roads for goods movement.	**Consistent.** The proposed project would include widening of the Midway Road eastbound lane by 9.5 feet to accommodate the three new driveways and allow for a two-way left turn lane. It would not impact any other nearby roadways post-construction.
Policy TR-P12.1: Maintain existing truck routes.	**Consistent.** Leisure Town Road and Elmira Road are both designated truck routes located more than 2 miles from the project site and would not be impacted by the proposed project.
Conservation and Open Space Element	
Goal COS-1: Protect and enhance habitat for sensitive species and natural communities.	**Consistent.** This SMND requires mitigation for impacts to special-status species and jurisdictional features. These mitigation measures are consistent with the objective of protecting special-status species. Refer to Section 3.4, Biological Resources, for further discussion.
Policy COS-P1.5: Require new development proposals to provide baseline assessments prepared by qualified biologists. The assessment shall contain sufficient detail to characterize the resources on, and adjacent to, the development site. The assessment shall also identify the presence of important and sensitive resources, such as wetlands, riparian habitats, and rare, threatened, or endangered species affected by the development.	**Consistent.** A biological assessment and wetland delineation were prepared for the proposed project to provide baseline assessments, an assessment of impacts, and mitigation measures. Refer to Section 3.4, Biological Resources, for further discussion.
Policy COS-P1.6: Require that new development minimize the disturbance of natural habitats and vegetation. Require revegetation of disturbed	**Consistent.** This ISMND requires mitigation for impacts to vegetation and habitat associated with Gibson Canyon Creek. These mitigation measures are consistent with the objective of minimizing

Goal, Policy, or Action	Consistency Determination
natural habitat areas with native or non-invasive naturalized species.	impacts. Refer to Section 3.4, Biological Resources, for further discussion.
Policy COS-P1.7: Encourage new development to incorporate native vegetation into landscape plans.	**Consistent.** The landscape design for the proposed project would conform to the site development standards of the Interchange Business Park Policy Plan and the standards and procedures set forth in the City's Water Efficient Landscape Regulations by incorporating native vegetation.
Policy COS-P1.8: Prohibit the use of invasive, non-native species, as identified by the State or County Department of Agriculture or other authoritative sources, in landscaping on public property or in common areas in private developments.	**Consistent.** The landscape design for the proposed project would conform to the site development standards for the Interchange Business Park Policy Plan and the standards and procedures set forth in the City's Water Efficient Landscape Regulations by incorporating native vegetation.
Policy COS-P1.9: Require that new development include provisions to protect and preserve wetland habitats that meet one of the following conditions: • The wetlands contribute to the habitat quality and value of reserve/preserve lands established or expected to be established in perpetuity for conservation purposes. • The wetlands are contiguous to riparian or stream corridors, or other permanently protected lands. • The wetlands are located within or contiguous to other high value natural areas.	**Consistent.** There are no wetland habitats on the project site that could contribute to habitat quality and value of reserve/preserve lands established or expected to be established in perpetuity for conservation purposes. None of the wetlands on the project site are contiguous to riparian or stream corridors. None of the wetlands are located within or contiguous to other high value natural areas. Refer to Section 3.4, Biological Resources, for further discussion.
Policy COS-P1.12: Until the Solano Habitat Conservation Plan (HCP) is adopted, comply with all of the Avoidance, Minimization, and Mitigation Measures listed in the Draft Solano HCP (see Appendix A for a list of the Avoidance and Minimization Measures that are applicable to Vacaville). In addition, require that development projects provide copies of required permits, or verifiable statements that permits are not required, from the California Department of Fish and Wildlife (2081 Individual Take Permit) and US Fish and Wildlife Service (Section 7 Take Authorization) prior to receiving grading permits or other approvals that would permit land disturbing activities and conversion of habitats or impacts to protected species. In cases where environmental review indicates that such permits may not be required, the Community Development Director may establish time limits of not less than 45 days from the submission of an adequate request for concurrence response from an agency. If the agency has not responded or requested a time extension of no more than 90 days to complete their assessment, within the established time frame, applicable grading permits or other authorizations may be provided, subject to other City requirements and review. However, the City's issuance of grading permits or other authorizations does not absolve the applicant's obligations to	**Consistent.** The mitigation measures set forth in Section 3.4, Biological Resources, are in accordance with those in the draft HCP. Therefore, the proposed project would not conflict with any adopted HCPs or other approved local, regional, or State habitat conservation plans.

Goal, Policy, or Action	Consistency Determination
comply with all other State and federal laws and regulations.	
Policy COS-P1.13: Require that new development avoid the loss of special-status bat species as feasible.	**Consistent.** No special-status bat species were found within 5 miles of the project site. However, the ISMND requires a mitigation measure for impacts on roosting bats. Refer to Section 3.4, Biological Resources, for further discussion.
Goal COS-2: Preserve and restore Vacaville's creeks.	**Consistent.** Internal access roads would cross Gibson Canyon Creek. The construction of roads would be subject to approval of Clean Water Act Section 401 and 404 and LSAA permits and implementation of mitigation measures. Refer to Section 3.4, Biological Resources, for further discussion.
Policy COS-P2.2: Protect existing stream channels and riparian vegetation by requiring buffering or landscaped setbacks and storm runoff interception.	**Consistent.** The proposed buildings would be offset by 100 feet to 210 feet from Gibson Canyon Creek. Landscaping would be installed along the creek. In addition, bioswales are planned north and south of the creek to intercept stormwater before it drains into the creek. Refer to Section 2.0, Project Description, for further discussion.
Policy COS-P2.3: Require creekway and riparian area protection during construction, such as providing adequate setbacks from the creek bank and riparian areas, and creekway and riparian area restoration after construction.	**Consistent.** The proposed project would implement stormwater pollution prevention management practices during construction and operations to prevent pollutants from entering Gibson Canyon Creek. Refer to Section 3.9, Hydrology and Water Quality, for further discussion.
Policy COS-P2.6: Promote invasive species control programs to reduce potential for infestations to occur and incorporate control programs as part of ongoing operational and maintenance activities along creek corridors.	**Consistent.** The Applicant shall obtain a Section 1602 Lake or Streambed Alteration Agreement (Mitigation Measure BIO-7). This agreement will mitigate impacts to the Gibson Canyon Creek corridor and would include measures to address invasive species control. Operations of the proposed project would include landscape management along Gibson Canyon Creek to discourage infestation. Refer to Section 3.4, Biological Resources, for further discussion.
Goal COS-8: Maintain and enhance the quality of Vacaville's scenic and visual resources.	**Consistent.** There are no designated scenic corridors in the project area. The proposed project is intended to provide a high-quality, well-planned warehouse development that would be consistent with this policy. Refer to Section 3.1, Aesthetics, for further discussion.
Policy COS-P8.1: Preserve scenic features and the feel of a city surrounded by open space and preserve view corridors to the hills and other significant natural areas.	**Consistent.** There are no designated scenic corridors in the project area. The proposed project would be built in an area planned for development and is intended to provide a high-quality, well-planned warehouse development that would be consistent with this policy. Refer to Section 3.1, Aesthetics, for further discussion.
Goal COS-9: Reduce greenhouse gas emissions and improve the sustainability of actions by City government, residents, and businesses in Vacaville.	**Consistent:** The proposed project would be subject to regulatory measures and policies adopted to reduce greenhouse gas emissions. Refer to Section 3.7, Greenhouse Gases, for further discussion.
Policy COS-P9.8: Promote green building practices in new development.	**Consistent.** The proposed project would promote green building practices by installing features such

Goal, Policy, or Action	Consistency Determination
	as, but not limited to, solar panels, LED lighting, high insulation, high performance rooftop units, and power management systems.
Goal COS-11: Conserve energy and fuel resources by increasing energy efficiency	**Consistent.** The proposed project would conserve energy and fuel resources by installing features such as, but not limited to, solar panels, LED lighting, high insulation, high performance rooftop units, and power management systems.
Policy COS-P11.1: Require that new development incorporate energy-efficient design features for HVAC, lighting systems, and insulation that exceed Title 24.	**Consistent.** The proposed project would incorporate energy-efficient design features such as, but not limited to, LED lighting, high insulation, and high performance rooftop units.
Policy COS-P11.2: Require that site and structure designs for new development promote energy efficiency.	**Consistent.** The proposed project would promote energy efficiency by installing features such as, but not limited to, LED lighting, high insulation, high performance rooftop units, and power management systems.
Goal COS-12: Maintain and improve air quality.	**Consistent:** The proposed project would be subject to regulatory measures adopted to reduce air quality impacts. Refer to Section 3.3, Air Quality, for further discussion.
Policy COS-P12.4: Require that development projects implement best management practices to reduce air pollutant emissions associated with the construction and operation of the project.	**Consistent:** The proposed project would be subject to regulatory measures adopted to meet ambient air quality standards. The proposed project would not be a source of significant toxic or hazardous air pollutants and odors. Refer to Section 3.3, Air Quality, for further discussion.
Public Facilities and Services Element	
Goal PUB-1: Provide adequate fire, rescue, and emergency medical services to serve existing and new development.	**Consistent:** The proposed project would install additional fire hydrants to serve the project site. Emergency medical services would be provided by the Fire Department. Refer to Section 3.18, Utilities and Service Systems, for further discussion.
Policy PUB-P1.5: Require that new development satisfy fire flow and hydrant requirements and other design requirements as established by the Fire Department.	**Consistent:** The proposed 12-inch fire water main would provide fire flows to the proposed project. The proposed project would also install 22 fire hydrants to serve the project site. Five of the hydrants would be installed along the Midway Road frontage at 250 feet to serve the City's proposed 12-inch water main.
Goal PUB-9: Reduce the volume of solid waste generated in Vacaville through recycling and resource conservation.	**Consistent.** The proposed project would provide on-site solid waste and recycling collection facilities that would allow for efficient, effective, and economical solid waste services. Refer to Section 3.18, Utilities and Service Systems, for further discussion.

Vacaville LDK Transportation Impact Analysis Report

Prepared for:

City of Vacaville

By:

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March 30, 2018

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1 CHAPTER 1: INTRODUCTION AND SUMMARY

The City of Vacaville has hired DKS associates to perform a Transportation Impact Analysis (TIA) for the proposed LDK development project. The proposed development site is located on the south side of Midway Road immediately west of Interstate 505 and includes three separate warehouse building with a total of 744,700 square feet of gross floor area. This report summarizes the results of the TIA and summarizes the operational impacts to the surrounding infrastructure attributable to the proposed development. The study area is presented in Figure 1. The current proposed overall site plan is included in Appendix A.

1.1 Study Intersections

Below is a list of the five study intersections identified for this analysis. These locations were selected based on discussion between DKS Associates and City of Vacaville staff.

1. Midway Road & I-505 Northbound Ramps
2. Midway Road & I-505 Southbound Ramps
3. Midway Road & Hartley Road/Eastern Site Access (Project Scenarios Only)
4. Midway Road & Center Site Access (Project Scenarios Only)
5. Midway Road & Western Site Access (Project Scenarios Only)

Counts for the ramp locations from April and May of 2015 were provided by the City of Vacaville for analysis. Through movement volumes at the project site driveways were calculated to be consistent with the provided ramp volumes. Some minor volume balancing was done as the traffic counts were collected on different days.

1.2 Summary of Results

This analysis finds that the project does not cause significant impacts to traffic delay at any of the study locations, however, a continuous two way left turn lane is recommended to improve safety at the project driveways. The Level of Service (LOS) analysis is summarized in Table 1.

Figure 1: Study Area Map

● Study Intersections

○ Project Driveway Intersections

Table 1: Summary of Intersection Operations for All Scenarios

Location	Intersection Control	Existing Conditions				Existing + Project Conditions			
		AM		PM		AM		PM	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	2.9	A	7.6	A	3.9	A	8.5	A
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A	1.2	A	1.1	A
Midway Road & Eastern Site Access	TWSC	N/A		N/A		1.4	A	2.0	A
Midway Road & Center Site Access	TWSC	N/A		N/A		0.1	A	0.1	A
Midway Road & Western Site Access	TWSC	N/A		N/A		0.5	A	0.1	A
Location	**Intersection Control**	**Existing + Baseline Conditions**				**Existing + Baseline + Project Conditions**			
		AM		**PM**		**AM**		**PM**	
		Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
Midway Road & I-505 Northbound Ramps	TWSC	3.1	A	7.7	A	4.0	A	8.8	A
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A	1.2	A	1.1	A
Midway Road & Eastern Site Access	TWSC	N/A		N/A		1.4	A	2.0	A
Midway Road & Center Site Access	TWSC	N/A		N/A		0.1	A	0.1	A
Midway Road & Western Site Access	TWSC	N/A		N/A		0.5	A	0.1	A
Location	**Intersection Control**	**2035 Conditions**				**2035 + Project Conditions**			
		AM		**PM**		**AM**		**PM**	
		Delay	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**	**Delay**	**LOS**
Midway Road & I-505 Northbound Ramps	TWSC	29.6	C	**>90**	**F**	29.6	C	**>90**	**F**
Midway Road & I-505 Southbound Ramps	TWSC	10.6	A	8.6	A	10.6	A	8.6	A
Midway Road & Eastern Site Access	TWSC	N/A		N/A		0.9	A	1.7	A
Midway Road & Center Site Access	TWSC	N/A		N/A		0.0	A	0.1	A
Midway Road & Western Site Access	TWSC	N/A		N/A		0.3	A	0.1	A

2 ANALYSIS ASSUMPTIONS AND METHODOLOGIES

The following section summarizes the assumptions and methodologies used for analysis. The trip generation and distribution discussed in this section were utilized for all project analysis scenarios.

2.1 Trip Generation

Trip Generation is the method used to estimate the number of vehicles added to site driveway and the adjacent roadway network by a development during a specified period (ie PM peak hour). For this study, the ITE Trip Generation Manual 10th Edition was utilized to calculate the trips generated by the project. After discussion with City staff, the average trip generation rate for ITE land use code 150: Warehousing was used to determine the total number of project trips. Given this land use assumption, no pass-by trip or diverted trip reductions were calculated. A summary of the project trip generation is included in Table 2.

Table 2: Project Trip Generation

Land Use	ITE Code	Size (KSF)	Daily Trip Rate/ KSF	AM Peak Hour Vehicle Trip Rate/KSF			PM Peak Hour Vehicle Trip Rate/KSF		
				Total	In %	Out %	Total	In %	Out %
Warehousing	150	744.7	1.74	0.17	77	23	0.19	27	73
Land Use	**ITE Code**	**Daily Trips**		**AM Peak Hour Vehicle Trips**			**PM Peak Hour Vehicle Trips**		
				Total	In	Out	Total	In	Out
Warehousing 150	150	1296		127	98	29	141	39	102

Source: ITE Trip Generation Manual 10th Edition
*KSF: 1000 square feet

2.2 Trip Distribution

Trip distribution describes where the project trips are going once they leave the development site. For this study, the trip distribution was determined by utilizing the City of Vacaville travel demand model. Peak hour trips coming from and going to the project site were tracked through the roadway network to determine percentages of total trips using each route to the project site. These percentages were then used with the ITE based trip generation previously discussed to determine the specific added traffic to each study intersection. The project trip distribution is summarized in Table 3 and the project trips added to each intersection are summarized in Figure 2.

Figure 2: Project Trip Distribution

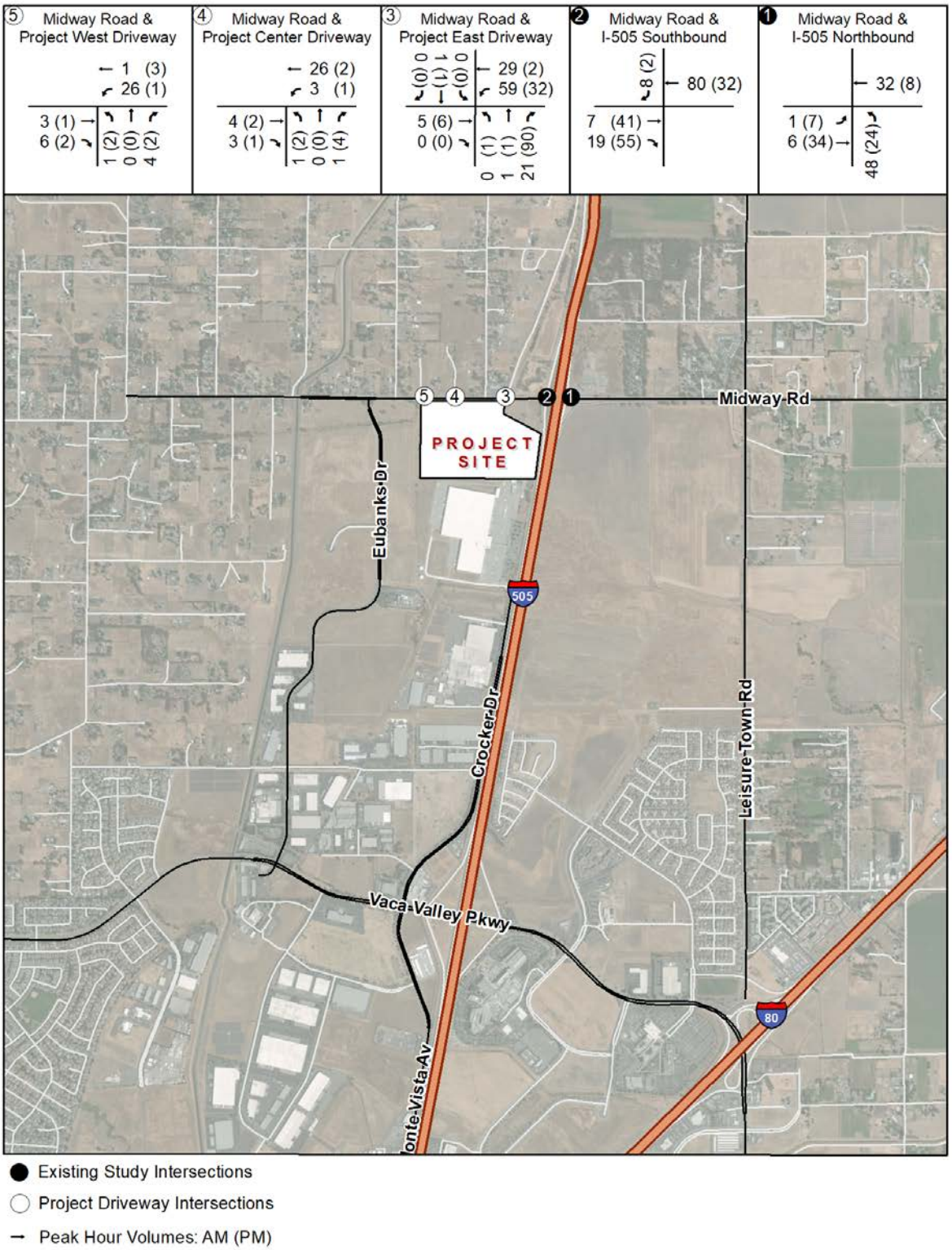


Table 3: Project Trip Distribution

Location	AM Trip Distribution		PM Trip Distribution	
	Inbound (%)	Outbound (%)	Inbound (%)	Outbound (%)
Midway Rd (West)	9	6	9	5
Midway Rd (East)	33	22	20	34
I-505 Northbound	50	5	66	8
I-505 Southbound	8	67	5	53

2.3 Level of Service

Intersections were evaluated utilizing the Level of Service (LOS) methodology outlined in the 2010 Highway Capacity Manual (HCM) as applied through Synchro/SimTraffic 9 software suite. This methodology estimates the average delay experienced by drivers going through the intersection and assigns one of six letter grades, ranging from A to F. These letter grades are based on driver perspective of the facility where LOS A represents the best operating condition and LOS F represents conditions that are near or over the capacity of the roadway. Table 4 summarizes the delay thresholds, in seconds, for each LOS at signalized and unsignalized locations.

Table 4: Level of Service Thresholds

Level of Service (LOS)	Total Delay Per Vehicle	
	Signalized Intersections	Unsignalized Intersections*
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80	> 50

Source: Highway Capacity Manual, 2010.

2.4 City Level of Service Policy

The City of Vacaville General Plan has the following policies relating to level of service and traffic congestion:

- **Policy TR-P3.1** - Endeavor to maintain LOS C as the LOS goal at all intersections and interchanges to facilitate the safe and efficient movement of people, goods, and services. Strive to design improvements to provide a LOS goal of C, based on the City's most recent 20+ year traffic forecast including signalized and unsignalized intersections.
- **Policy TR-P3.2** - At signalized and all-way stop control intersections, LOS mid-D shall be the LOS significance threshold. At two-way stop control intersections, LOS D shall be the LOS significance threshold.
- **Policy TR-P3.3** - To allow for infill development and higher density development at transit centers, the LOS significance threshold shall be LOS D at signalized and all-way stop control intersections in the Downtown Urban High Density Residential Overlay District or other Priority Development Areas (PDA) designated by the City. At two-way stop controlled intersections in these areas, the overall LOS significance threshold shall be LOS mid-E.
- **Policy TR-P3.4** - The City may allow LOS above the established LOS significance thresholds for a particular location as an interim level of service where improvements are programmed by the City that will improve the service to an acceptable level.
- **Policy TR-P3.5** - The City may allow LOS above the established LOS significance thresholds for a particular location on the basis of specific findings described in Chapter 14.13 of the Vacaville Land Use and Development Code, Traffic Impact Mitigation Ordinance.

None of the intersections analyzed fall in a city Priority Development Area and thus the thresholds set forth in Policy TR-P3.2 apply to all locations.

3 EXISTING CONDITIONS ANALYSIS

Existing conditions analysis establishes baseline traffic conditions for which all other scenarios can be compared. Existing turning movement counts from spring of 2015 were provided by the City of Vacaville for the two existing intersections to be studied; Midway Road at I-505 northbound ramps and Midway Road at I-505 southbound ramps. These counts included the AM peak traffic period from 7:00 am – 9:00 am and the PM peak traffic period from 4:00 pm – 6:00 pm. The peak hour from each of these periods was analyzed. Some volume balancing was done on the count volumes to account for the counts being collected on different days.

Existing geometry, including number of lanes and storage capacity, was obtained from current aerial images. All of the study intersections are side street stop controlled with no traffic control on Midway Road. Figures showing the lane geometries and traffic volumes for analysis can be found in Appendix B.

3.1 Roadway Network

The site is primarily served by Midway Road and I-505. These roadways are described below.

Interstate 505 (I-505)- is an interstate spur which connects I-80 in Vacaville to I-5 in northern Yolo County. Within Vacaville city limits I-505 is a four lane divided freeway with a 65 mph speed limit. A full access interchange to this facility is located at Midway Road immediately east of the project site.

Midway Road- is a rural two-lane roadway which runs east-west at the northern city limit of Vacaville. This roadway currently primarily serves local traffic.

3.2 Existing Conditions Intersection Operations

Table 5 provides a summary of the existing operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C.

Table 5: Existing Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	2.9	A	7.6	A
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A

TWSC=Two Way Stop Control

3.3 Existing with Project Intersection Operations

Table 6 provides a summary of existing with project operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C. There are no project impacts under existing with project conditions. Although delay increases slightly at the two existing intersections, the intersections remain at LOS A and increases in delay are less than five seconds at each intersection. The three site access intersections are also projected to operate at LOS A.

Table 6: Existing with Project Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	3.9	A	8.5	A
Midway Road & I-505 Southbound Ramps	TWSC	1.2	A	1.1	A
Midway Road & Eastern Site Access	TWSC	1.4	A	2.0	A
Midway Road & Center Site Access	TWSC	0.1	A	0.1	A
Midway Road & Western Site Access	TWSC	0.5	A	0.1	A

4 EXISTING PLUS APPROVED/PENDING (BASELINE) CONDITIONS

Existing plus baseline conditions is used to establish that the combined effects of this project with other nearby approved or pending projects would not cause impacts. After discussion with city staff, one baseline project was identified on Eubanks Drive.

4.1 Trip Generation and Distribution

Table 7 shows the trip generation developed for the background project. Figure 3 shows the trips that are assigned to the study intersections.

Table 7: Trip Generation of Approved/Pending Development

Land Use	ITE Code	Size (KSF)	Daily Trip Rate/ KSF	AM Peak Hour Vehicle Trip Rate/KSF			PM Peak Hour Vehicle Trip Rate/KSF		
				Total	In %	Out %	Total	In %	Out %
Warehousing	150	263.4	1.74	0.17	77	23	0.19	27	73
Land Use	**ITE Code**	**Daily Trips**		**AM Peak Hour Vehicle Trips**			**PM Peak Hour Vehicle Trips**		
				Total	**In**	**Out**	**Total**	**In**	**Out**
Warehousing 150	150	458		45	35	10	50	13	37

4.2 Existing Plus Baseline Intersection Operations

Table 8 provides a summary of the existing with baseline operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C.

Table 8: Existing Plus Baseline Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	3.1	A	7.7	A
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A

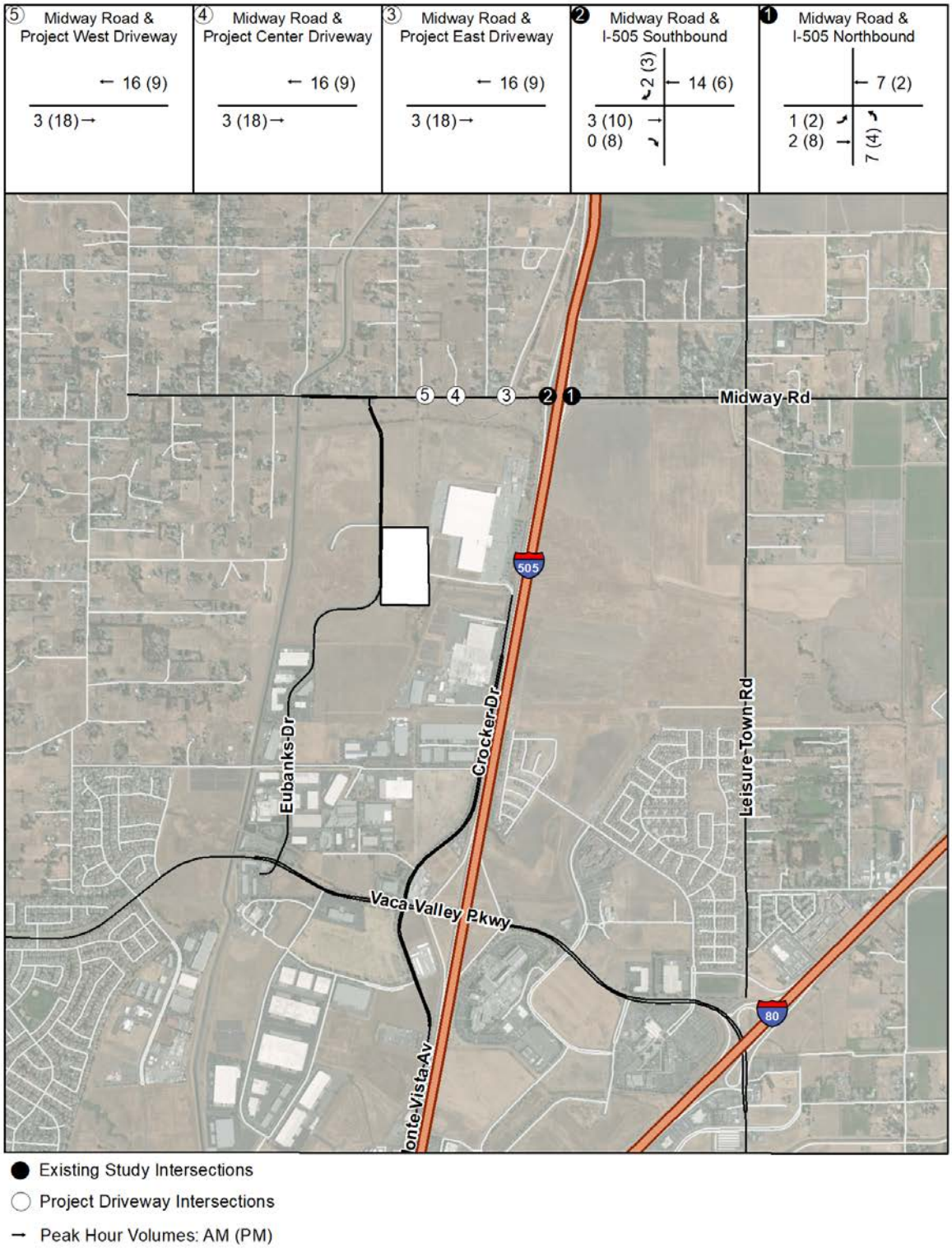
4.3 Existing Plus Baseline with Project Intersection Operations

Table 9 provides a summary of existing plus baseline with project operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C. There are no project impacts under existing plus baseline with project conditions.

Table 9: Existing Plus Baseline with Project Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	4.0	A	8.8	A
Midway Road & I-505 Southbound Ramps	TWSC	1.2	A	1.1	A
Midway Road & Eastern Site Access	TWSC	1.4	A	2.0	A
Midway Road & Center Site Access	TWSC	0.1	A	0.1	A
Midway Road & Western Site Access	TWSC	0.5	A	0.1	A

Figure 3: Approved/Pending Project Trip Distribution



5 CUMULATIVE YEAR CONDITIONS

The cumulative year condition represents a planning horizon for the project study area. Based on input from city staff, the cumulative condition is based on a 2035 horizon with build out of the area surrounding the proposed project (without the proposed project).

5.1 Future Land Use Assumptions

The cumulative no project condition is based on City of Vacaville 20-year (2035) horizon land use forecasts, with build out of land uses on vacant land generally bounded by Midway Road to the north, Eubanks Drive to the west, Vaca Valley Parkway to the south, and I-505 to the east. The site of the proposed project represents a portion of that area, but is assumed to be vacant for the cumulative no project scenario.

5.2 Future Intersection Operations

Table 10 provides a summary of the future operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C.

Table 10: Future Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	29.6	C	**>90**	**F**
Midway Road & I-505 Southbound Ramps	TWSC	10.6	A	8.6	A

5.3 Future with Project Intersection Operations

Table 11 provides a summary of future plus project operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C. There are no project impacts under future with project conditions. Midway Road and the I-505 Northbound Ramps will not operate acceptably for both future and future with project scenarios, but the project-added delay will be negligible (far below the five second threshold for a project impact).

Table 11: Future with Project Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	29.6	C	**>90**	**F**
Midway Road & I-505 Southbound Ramps	TWSC	10.6	A	8.6	A
Midway Road & Eastern Site Access	TWSC	0.9	A	1.7	A
Midway Road & Center Site Access	TWSC	0.0	A	0.1	A
Midway Road & Western Site Access	TWSC	0.3	A	0.1	A

6 CONCLUSION

Based on the completed operations analysis, no impacts have been identified related to the LDK development project, however, a continuous two-way left turn lane is recommended along Midway Road in front of the proposed development. The state of California does not have specific left turn lane warrants; however a review of the literature shows that the site access locations do justify left turn lanes. In *NCHRP Report 745*, general guidelines are put forth for left turn warrants based on existing research. Table 12 below from *Report 745* shows the volume warrant for a two-lane rural highway. Under existing conditions, the eastbound through volume is already over 200 vehicles per hour during the peaks and thus any amount of left turning traffic accessing the site would justify a left turn lane under this guidance.

Table 12: Recommended Left-Turn Treatment Warrants for Rural Two-Lane Highways[1]

Left-Turn Lane Paek-Hour Volume (veh/hr)	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	50	200	50	150
10	50	100	<50	50
15	<50	100	<50	50
20	<50	50	<50	<50
25	<50	50	<50	<50
30	<50	50	<50	<50
35	<50	50	<50	<50
40	<50	50	<50	<50
45	<50	50	<50	<50
50 or More	<50	50	<50	<50

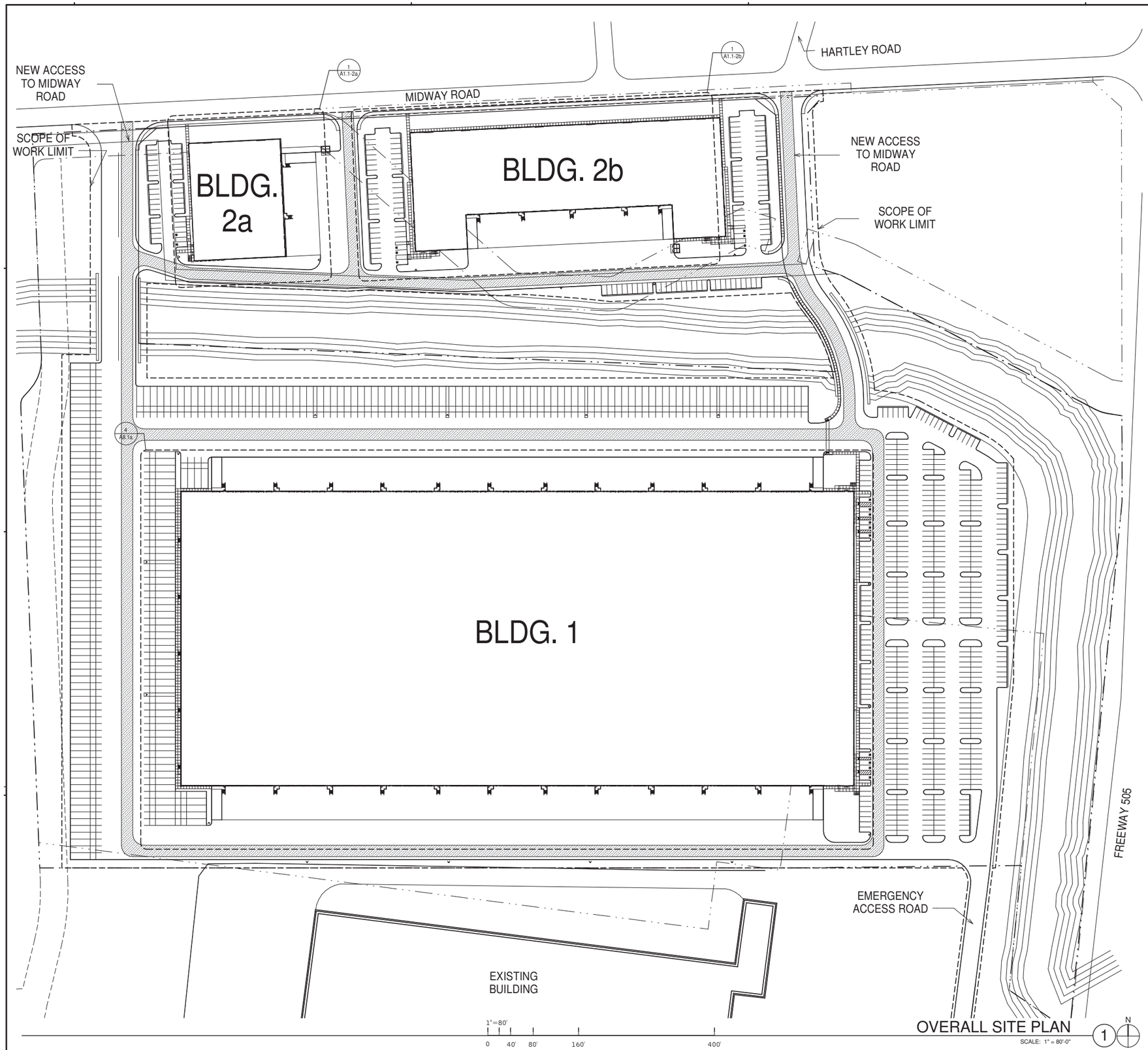
[1] National Cooperative Research Board *NCHRP Report 745: Left-Turn Accommodations at Unsignalized Intersections*, 2013

A two-way left turn lane is further justified to maintain safe operations at the site driveways. Acknowledging that much of the entering and exiting volume to the site throughout the day will be tractor-trailers a two-way left turn lane that allows for two-stage left turns is recommended to improve safety. The Transportation Research Board's *Access Management Manual 2nd Edition* states roadways with a two-way left turn lane on average have a 35% lower crash rate than undivided roadways in addition to having capacity and delay benefits. It notes that these benefits are seen with daily volumes up to 24,000 daily vehicles at which point a solid median with left turn lanes should be considered.[2]

[2] Transportation Research Board *Access Management Manual 2nd Edition*, 2014

Appendix A
Proposed Site Plan

CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT



OVERALL SITE PLAN

1 SCALE: 1" = 80'-0"

CHAPTER 10 - MEANS OF EGRESS (SEE OCCUPANCY AND EGRESS PLANS)

SITE DATA

SITE AREA 1:

LOT	1,849,593 S.F.	(42.46 ACRES)
BUILDING 1 AREA	617,760	S.F.
BUILDING COVERAGE	33	%
LANDSCAPE AREA	XXX,XXX	S.F.
LANDSCAPE COVERAGE	XXX	%
PARKING REQUIRED	1/2000	WAREHOUSE
WAREHOUSE	309	REQUIRED
ACCESSIBLE PARKING	10	REQUIRED
BUILDING 1		
STANDARD PARKING PROVIDED	492	STALLS @0.8/1000 S.F.
ACCESSIBLE PARKING PROVIDED	10	STALLS
TOTAL PARKING PROVIDED	502	STALLS
TRAILER PARKING PROVIDED	233	STALLS
TRUCK DOCKS		
DOCK-HIGH DOORS	112	
KNOCK-OUTS	20	
GRADE-LEVEL DOORS	4	

SITE AREA 2:

LOT (GROSS)	494,226 S.F.	(11.35 ACRES)
WETLANDS	129,306 S.F.	
LOT (NET)	364,920 S.F.	(8.38 ACRES)
BUILDING 2a AREA	33,696	S.F.
BUILDING 2b AREA	93,240	S.F.
TOTAL FOOTPRINT	126,936	S.F.
BUILDING COVERAGE (GROSS)	26	%
BUILDING COVERAGE (NET)	35	%
LANDSCAPE AREA	XXX,XXX	S.F.
LANDSCAPE COVERAGE	XXX	%
BUILDING 2a		
ACCESSIBLE PARKING REQUIRED	2	STALLS
STANDARD PARKING REQUIRED	36	STALLS @1.07/1000 S.F.
ACCESSIBLE PARKING PROVIDED	2	STALLS
TOTAL PARKING PROVIDED	38	STALLS
TRUCK DOCKS		
DOCK-HIGH DOORS	10	
KNOCK-OUTS	1	
GRADE-LEVEL DOORS	1	
BUILDING 2b		
ACCESSIBLE PARKING REQUIRED	5	STALLS
STANDARD PARKING PROVIDED	124	STALLS @1.33/1000 S.F.
ACCESSIBLE PARKING PROVIDED	6	STALLS
TOTAL PARKING PROVIDED	130	STALLS
TRUCK DOCKS		
DOCK-HIGH DOORS	24	
KNOCK-OUTS	4	
GRADE-LEVEL DOORS	2	

SITE LEGEND

PROPERTY LINE

FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)

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SITE PLAN

DATE	REMARKS

PA/PM:	P. NORCROSS
DRAWN BY.:	A.K.
JOB NO.:	SNR17-0043-00

SHEET
A1.1

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Appendix B
ITE Trip Generation for Land Use Code 150: Warehousing

Warehousing
(150)

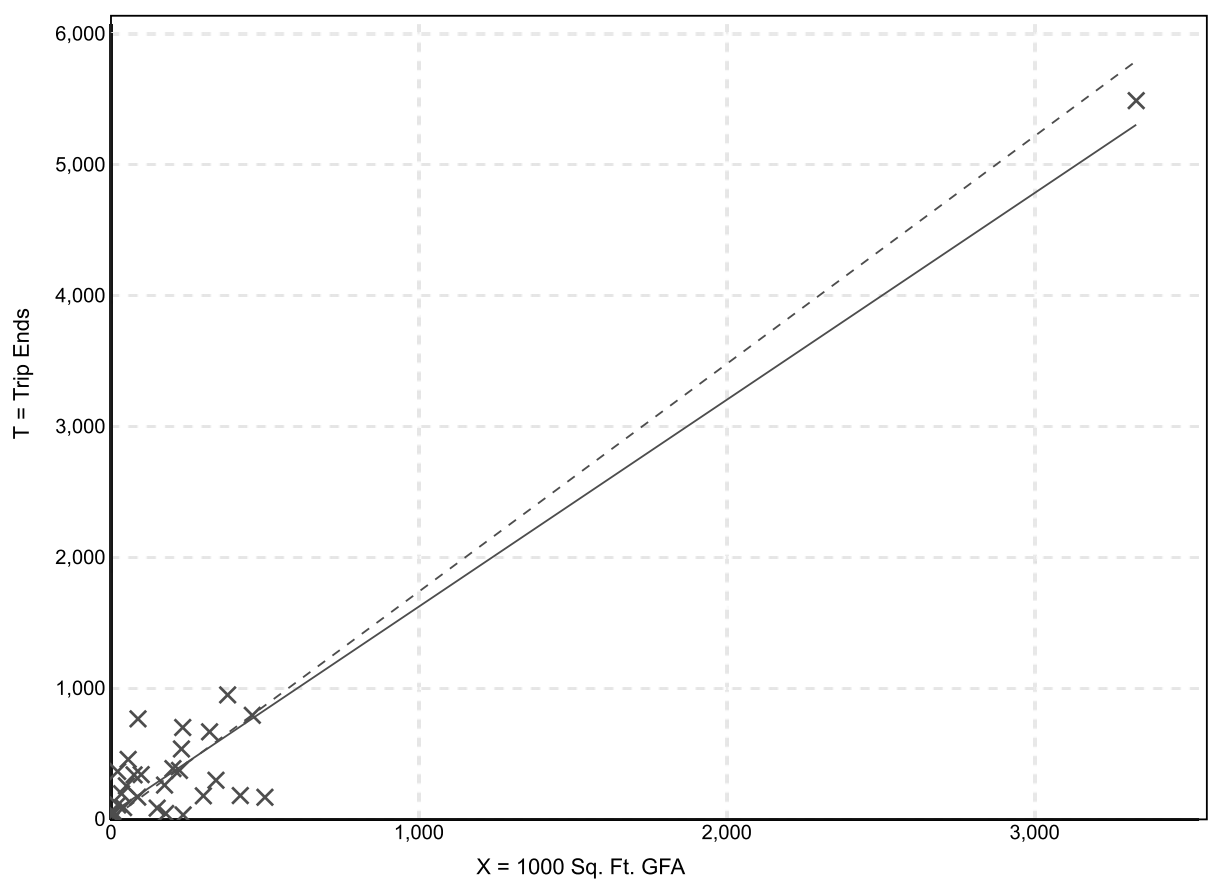
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. 1000 Sq. Ft. GFA: 285
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.74	0.15 - 16.93	1.55

Data Plot and Equation



Fitted Curve Equation: T = 1.58(X) + 45.54 **R^2= 0.93**

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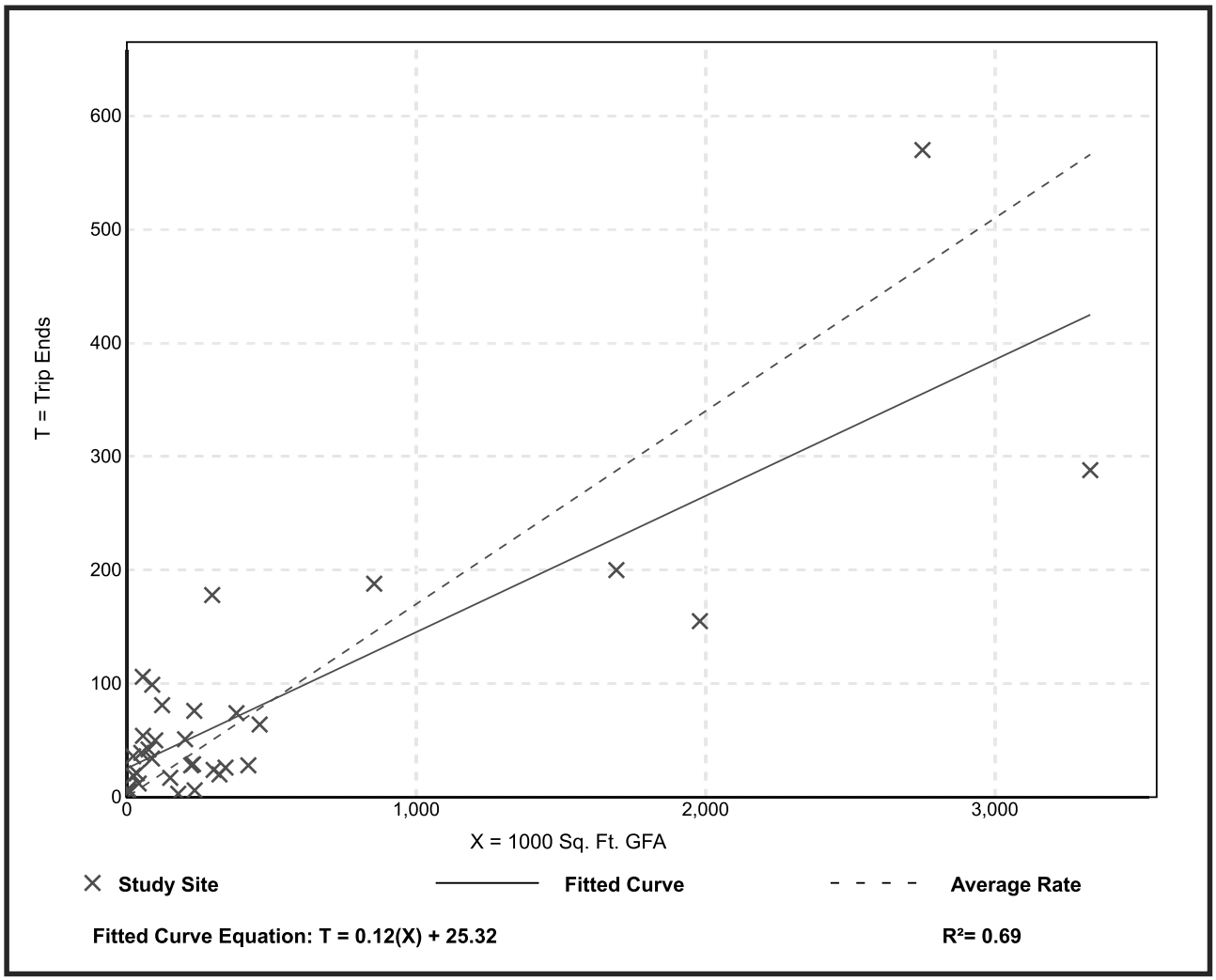
Warehousing
(150)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	34
Avg. 1000 Sq. Ft. GFA:	451
Directional Distribution:	77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



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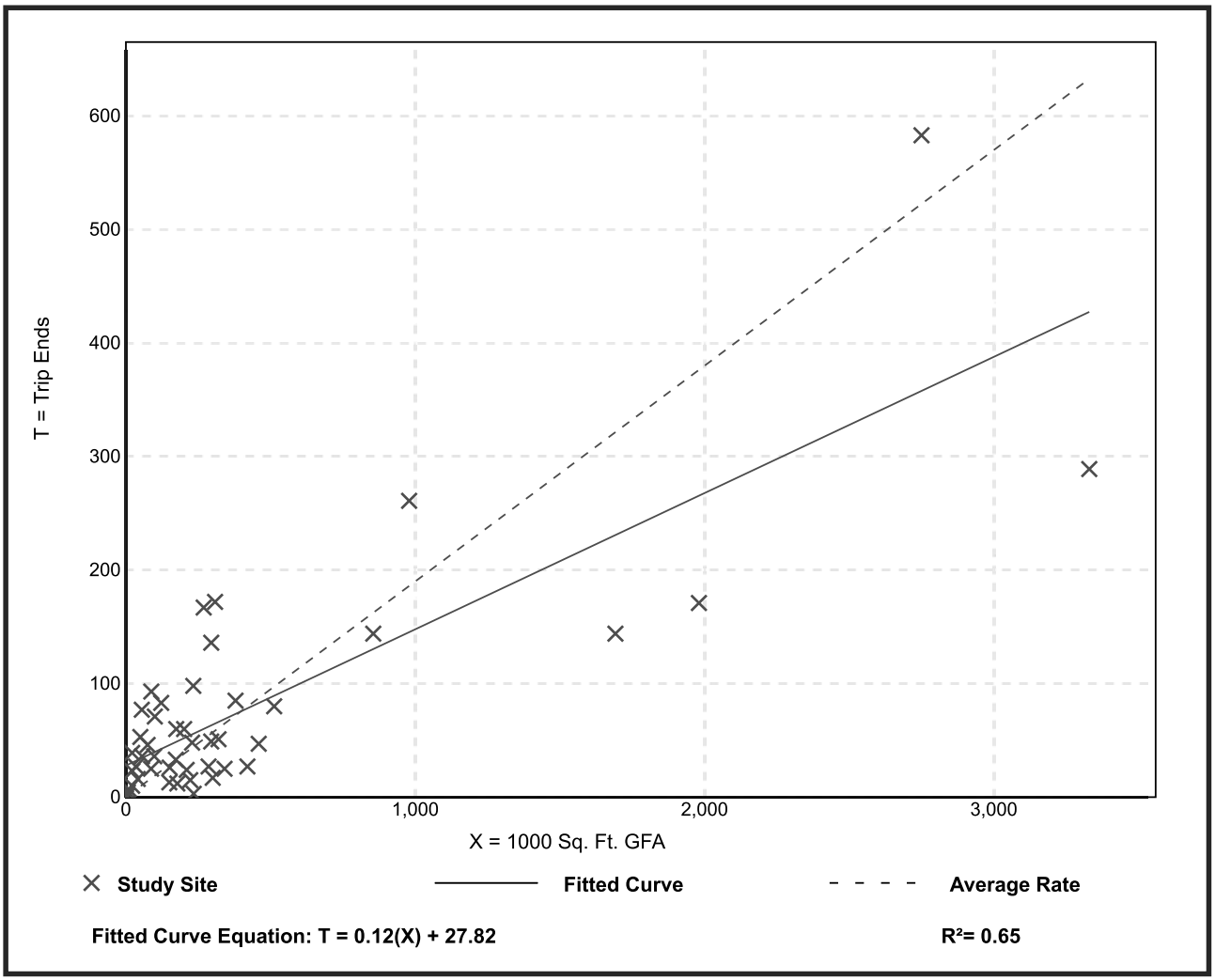
Warehousing
(150)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	47
Avg. 1000 Sq. Ft. GFA:	400
Directional Distribution:	27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

Appendix C
Synchro Outputs

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	120	188	31	134	0	0	0	0	13	2	24
Future Vol, veh/h	0	120	188	31	134	0	0	0	0	13	2	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	130	204	34	146	0	0	0	0	14	2	26

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	335	0	0	446	548	146
Stage 1	-	-	-	-	-	-	213	213	-
Stage 2	-	-	-	-	-	-	233	335	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1224	-	0	570	444	901
Stage 1	0	-	-	-	-	0	823	726	-
Stage 2	0	-	-	-	-	0	806	643	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1224	-	-	553	0	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	553	0	-
Stage 1	-	-	-	-	-	-	798	0	-
Stage 2	-	-	-	-	-	-	806	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.5	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1224	-	738
HCM Lane V/C Ratio	-	-	0.028	-	0.057
HCM Control Delay (s)	-	-	8	0	10.2
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	117	0	0	108	18	57	0	29	0	0	0
Future Vol, veh/h	16	117	0	0	108	18	57	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	127	0	0	117	20	62	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	137	0	-	-	-	0	289	299	127
Stage 1	-	-	-	-	-	-	162	162	-
Stage 2	-	-	-	-	-	-	127	137	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1447	-	0	0	-	-	702	613	923
Stage 1	-	-	0	0	-	-	867	764	-
Stage 2	-	-	0	0	-	-	899	783	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1447	-	-	-	-	-	693	0	923
Mov Cap-2 Maneuver	-	-	-	-	-	-	693	0	-
Stage 1	-	-	-	-	-	-	856	0	-
Stage 2	-	-	-	-	-	-	899	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	757	1447	-	-	-
HCM Lane V/C Ratio	0.123	0.012	-	-	-
HCM Control Delay (s)	10.4	7.5	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	122	88	35	314	0	0	0	0	19	1	17
Future Vol, veh/h	0	122	88	35	314	0	0	0	0	19	1	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	133	96	38	341	0	0	0	0	21	1	18

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	228	0	0	597	645	341
Stage 1	-	-	-	-	-	-	417	417	-
Stage 2	-	-	-	-	-	-	180	228	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1340	-	0	466	391	701
Stage 1	0	-	-	-	-	0	665	591	-
Stage 2	0	-	-	-	-	0	851	715	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1340	-	-	450	0	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	0	-
Stage 1	-	-	-	-	-	-	642	0	-
Stage 2	-	-	-	-	-	-	851	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.8	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1340	-	542
HCM Lane V/C Ratio	-	-	0.028	-	0.074
HCM Control Delay (s)	-	-	7.8	0	12.2
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	119	0	0	117	19	232	0	59	0	0	0
Future Vol, veh/h	22	119	0	0	117	19	232	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	129	0	0	127	21	252	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	148	0	-	-	-	0	315	325	129
Stage 1	-	-	-	-	-	-	177	177	-
Stage 2	-	-	-	-	-	-	138	148	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1434	-	0	0	-	-	678	593	921
Stage 1	-	-	0	0	-	-	854	753	-
Stage 2	-	-	0	0	-	-	889	775	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1434	-	-	-	-	-	666	0	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	666	0	-
Stage 1	-	-	-	-	-	-	839	0	-
Stage 2	-	-	-	-	-	-	889	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	706	1434	-	-	-
HCM Lane V/C Ratio	0.448	0.017	-	-	-
HCM Control Delay (s)	14.2	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	2.3	0.1	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	127	207	31	214	0	0	0	0	13	2	32
Future Vol, veh/h	0	127	207	31	214	0	0	0	0	13	2	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	138	225	34	233	0	0	0	0	14	2	35

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	363	0	0	551	663	233
Stage 1	-	-	-	-	-	-	300	300	-
Stage 2	-	-	-	-	-	-	251	363	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1196	-	0	495	382	806
Stage 1	0	-	-	-	-	0	752	666	-
Stage 2	0	-	-	-	-	0	791	625	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1196	-	-	479	0	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	479	0	-
Stage 1	-	-	-	-	-	-	727	0	-
Stage 2	-	-	-	-	-	-	791	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1196	-	673
HCM Lane V/C Ratio	-	-	0.028	-	0.076
HCM Control Delay (s)	-	-	8.1	0	10.8
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	123	0	0	140	18	105	0	29	0	0	0
Future Vol, veh/h	17	123	0	0	140	18	105	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	134	0	0	152	20	114	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	172	0	-	-	-	0	333	343	134
Stage 1	-	-	-	-	-	-	171	171	-
Stage 2	-	-	-	-	-	-	162	172	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1405	-	0	0	-	-	662	579	915
Stage 1	-	-	0	0	-	-	859	757	-
Stage 2	-	-	0	0	-	-	867	756	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1405	-	-	-	-	-	653	0	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	653	0	-
Stage 1	-	-	-	-	-	-	847	0	-
Stage 2	-	-	-	-	-	-	867	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	696	1405	-	-	-
HCM Lane V/C Ratio	0.209	0.013	-	-	-
HCM Control Delay (s)	11.5	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.8	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	308	0	59	187	0	0	1	21	5	1	5
Future Vol, veh/h	0	308	0	59	187	0	0	1	21	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	335	0	64	203	0	0	1	23	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	335	0	0	670	667	335	679	667	203
Stage 1	-	-	-	-	-	-	335	335	-	332	332	-
Stage 2	-	-	-	-	-	-	335	332	-	347	335	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1369	-	-	1224	-	-	371	380	707	366	380	838
Stage 1	-	-	-	-	-	-	679	643	-	681	644	-
Stage 2	-	-	-	-	-	-	679	644	-	669	643	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1369	-	-	1224	-	-	351	358	707	337	358	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	358	-	337	358	-
Stage 1	-	-	-	-	-	-	679	643	-	681	606	-
Stage 2	-	-	-	-	-	-	634	606	-	646	643	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.9	10.5	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	677	1369	-	-	1224	-	-	466
HCM Lane V/C Ratio	0.035	-	-	-	0.052	-	-	0.026
HCM Control Delay (s)	10.5	0	-	-	8.1	0	-	12.9
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	307	3	3	189	1	1
Future Vol, veh/h	307	3	3	189	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	334	3	3	205	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	337	0	547	335
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1222	-	498	707
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1222	-	497	707
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	821	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1222	-
HCM Lane V/C Ratio	0.004	-	-	0.003	-
HCM Control Delay (s)	11.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	306	6	26	164	1	4
Future Vol, veh/h	306	6	26	164	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	333	7	28	178	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	339	0	571	336
Stage 1	-	-	-	-	336	-
Stage 2	-	-	-	-	235	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1220	-	482	706
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1220	-	470	706
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1220	-
HCM Lane V/C Ratio	0.008	-	-	0.023	-
HCM Control Delay (s)	10.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	163	143	35	346	0	0	0	0	19	1	19
Future Vol, veh/h	0	163	143	35	346	0	0	0	0	19	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	177	155	38	376	0	0	0	0	21	1	21

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	333	0	0	707	785	376
Stage 1	-	-	-	-	-	-	452	452	-
Stage 2	-	-	-	-	-	-	255	333	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1226	-	0	402	325	670
Stage 1	0	-	-	-	-	0	641	570	-
Stage 2	0	-	-	-	-	0	788	644	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1226	-	-	386	0	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	386	0	-
Stage 1	-	-	-	-	-	-	616	0	-
Stage 2	-	-	-	-	-	-	788	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.7	13
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1226	-	490
HCM Lane V/C Ratio	-	-	0.031	-	0.087
HCM Control Delay (s)	-	-	8	0	13
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	153	0	0	125	19	256	0	59	0	0	0
Future Vol, veh/h	29	153	0	0	125	19	256	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	166	0	0	136	21	278	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	157	0	-	-	-	0	375	386	166
Stage 1	-	-	-	-	-	-	229	229	-
Stage 2	-	-	-	-	-	-	146	157	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1423	-	0	0	-	-	626	548	878
Stage 1	-	-	0	0	-	-	809	715	-
Stage 2	-	-	0	0	-	-	881	768	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1423	-	-	-	-	-	610	0	878
Mov Cap-2 Maneuver	-	-	-	-	-	-	610	0	-
Stage 1	-	-	-	-	-	-	789	0	-
Stage 2	-	-	-	-	-	-	881	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	647	1423	-	-	-
HCM Lane V/C Ratio	0.529	0.022	-	-	-
HCM Control Delay (s)	16.6	7.6	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	3.1	0.1	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	211	0	32	333	0	1	1	90	5	1	5
Future Vol, veh/h	0	211	0	32	333	0	1	1	90	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	229	0	35	362	0	1	1	98	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	362	0	0	229	0	0	664	661	229	711	661	362
Stage 1	-	-	-	-	-	-	229	229	-	432	432	-
Stage 2	-	-	-	-	-	-	435	432	-	279	229	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1197	-	-	1339	-	-	374	383	810	348	383	683
Stage 1	-	-	-	-	-	-	774	715	-	602	582	-
Stage 2	-	-	-	-	-	-	600	582	-	728	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1197	-	-	1339	-	-	361	370	810	298	370	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	370	-	298	370	-
Stage 1	-	-	-	-	-	-	774	715	-	602	563	-
Stage 2	-	-	-	-	-	-	574	563	-	639	715	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	10.2	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	789	1197	-	-	1339	-	-	410
HCM Lane V/C Ratio	0.127	-	-	-	0.026	-	-	0.029
HCM Control Delay (s)	10.2	0	-	-	7.8	0	-	14
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	207	1	1	338	2	4
Future Vol, veh/h	207	1	1	338	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	1	1	367	2	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	226	0	596	226
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1342	-	466	813
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1342	-	466	813
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	698	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	651	-	-	1342	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	10.6	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	206	2	1	339	2	2
Future Vol, veh/h	206	2	1	339	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	2	1	368	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	226	0	596	225
Stage 1	-	-	-	-	225	-
Stage 2	-	-	-	-	371	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1342	-	466	814
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	698	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1342	-	466	814
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	1342	-
HCM Lane V/C Ratio	0.007	-	-	0.001	-
HCM Control Delay (s)	11.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	123	188	31	148	0	0	0	0	13	2	26
Future Vol, veh/h	0	123	188	31	148	0	0	0	0	13	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	134	204	34	161	0	0	0	0	14	2	28

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	338	0	0	464	566	161
Stage 1	-	-	-	-	-	-	228	228	-
Stage 2	-	-	-	-	-	-	236	338	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1221	-	0	556	434	884
Stage 1	0	-	-	-	-	0	810	715	-
Stage 2	0	-	-	-	-	0	803	641	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1221	-	-	539	0	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	539	0	-
Stage 1	-	-	-	-	-	-	785	0	-
Stage 2	-	-	-	-	-	-	803	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.4	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1221	-	729
HCM Lane V/C Ratio	-	-	0.028	-	0.061
HCM Control Delay (s)	-	-	8	0	10.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	119	0	0	115	18	64	0	29	0	0	0
Future Vol, veh/h	17	119	0	0	115	18	64	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	129	0	0	125	20	70	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	145	0	-	-	-	0	301	311	129
Stage 1	-	-	-	-	-	-	166	166	-
Stage 2	-	-	-	-	-	-	135	145	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1437	-	0	0	-	-	691	604	921
Stage 1	-	-	0	0	-	-	863	761	-
Stage 2	-	-	0	0	-	-	891	777	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1437	-	-	-	-	-	682	0	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	682	0	-
Stage 1	-	-	-	-	-	-	852	0	-
Stage 2	-	-	-	-	-	-	891	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	742	1437	-	-	-
HCM Lane V/C Ratio	0.136	0.013	-	-	-
HCM Control Delay (s)	10.6	7.5	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.5	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	132	96	35	320	0	0	0	0	19	1	20
Future Vol, veh/h	0	132	96	35	320	0	0	0	0	19	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	143	104	38	348	0	0	0	0	21	1	22

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	248	0	0	620	672	348
Stage 1	-	-	-	-	-	-	424	424	-
Stage 2	-	-	-	-	-	-	196	248	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1318	-	0	452	377	695
Stage 1	0	-	-	-	-	0	660	587	-
Stage 2	0	-	-	-	-	0	837	701	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1318	-	-	436	0	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	0	-
Stage 1	-	-	-	-	-	-	636	0	-
Stage 2	-	-	-	-	-	-	837	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.8	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1318	-	539
HCM Lane V/C Ratio	-	-	0.029	-	0.081
HCM Control Delay (s)	-	-	7.8	0	12.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	127	0	0	119	19	236	0	59	0	0	0
Future Vol, veh/h	24	127	0	0	119	19	236	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	138	0	0	129	21	257	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	150	0	-	-	-	0	330	340	138
Stage 1	-	-	-	-	-	-	190	190	-
Stage 2	-	-	-	-	-	-	140	150	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1431	-	0	0	-	-	665	582	910
Stage 1	-	-	0	0	-	-	842	743	-
Stage 2	-	-	0	0	-	-	887	773	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1431	-	-	-	-	-	652	0	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	652	0	-
Stage 1	-	-	-	-	-	-	825	0	-
Stage 2	-	-	-	-	-	-	887	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	691	1431	-	-	-
HCM Lane V/C Ratio	0.464	0.018	-	-	-
HCM Control Delay (s)	14.6	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	2.5	0.1	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	130	207	31	228	0	0	0	0	13	2	34
Future Vol, veh/h	0	130	207	31	228	0	0	0	0	13	2	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	141	225	34	248	0	0	0	0	14	2	37

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	366	0	0	569	681	248
Stage 1	-	-	-	-	-	-	315	315	-
Stage 2	-	-	-	-	-	-	254	366	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1193	-	0	484	373	791
Stage 1	0	-	-	-	-	0	740	656	-
Stage 2	0	-	-	-	-	0	788	623	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1193	-	-	468	0	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	468	0	-
Stage 1	-	-	-	-	-	-	716	0	-
Stage 2	-	-	-	-	-	-	788	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1193	-	664
HCM Lane V/C Ratio	-	-	0.028	-	0.08
HCM Control Delay (s)	-	-	8.1	0	10.9
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	125	0	0	147	18	112	0	29	0	0	0
Future Vol, veh/h	18	125	0	0	147	18	112	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	136	0	0	160	20	122	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	179	0	-	-	-	0	345	354	136
Stage 1	-	-	-	-	-	-	175	175	-
Stage 2	-	-	-	-	-	-	170	179	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1397	-	0	0	-	-	652	571	913
Stage 1	-	-	0	0	-	-	855	754	-
Stage 2	-	-	0	0	-	-	860	751	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1397	-	-	-	-	-	642	0	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	0	-
Stage 1	-	-	-	-	-	-	842	0	-
Stage 2	-	-	-	-	-	-	860	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	684	1397	-	-	-
HCM Lane V/C Ratio	0.224	0.014	-	-	-
HCM Control Delay (s)	11.8	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.9	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	311	0	59	203	0	0	1	21	5	1	5
Future Vol, veh/h	0	311	0	59	203	0	0	1	21	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	338	0	64	221	0	0	1	23	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	338	0	0	690	687	338	699	687	221
Stage 1	-	-	-	-	-	-	338	338	-	349	349	-
Stage 2	-	-	-	-	-	-	352	349	-	350	338	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1348	-	-	1221	-	-	359	370	704	354	370	819
Stage 1	-	-	-	-	-	-	676	641	-	667	633	-
Stage 2	-	-	-	-	-	-	665	633	-	666	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1221	-	-	339	348	704	326	348	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	339	348	-	326	348	-
Stage 1	-	-	-	-	-	-	676	641	-	667	595	-
Stage 2	-	-	-	-	-	-	620	595	-	643	641	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	10.5	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	673	1348	-	-	1221	-	-	452
HCM Lane V/C Ratio	0.036	-	-	-	0.053	-	-	0.026
HCM Control Delay (s)	10.5	0	-	-	8.1	0	-	13.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	3	3	205	1	1
Future Vol, veh/h	310	3	3	205	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	3	3	223	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	340	0	568	339
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1219	-	484	703
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1219	-	483	703
Mov Cap-2 Maneuver	-	-	-	-	483	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	573	-	-	1219	-
HCM Lane V/C Ratio	0.004	-	-	0.003	-
HCM Control Delay (s)	11.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	309	6	26	180	1	4
Future Vol, veh/h	309	6	26	180	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	336	7	28	196	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	342	0	591	339
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1217	-	470	703
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	458	703
Mov Cap-2 Maneuver	-	-	-	-	458	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	769	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	635	-	-	1217	-
HCM Lane V/C Ratio	0.009	-	-	0.023	-
HCM Control Delay (s)	10.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	173	151	35	352	0	0	0	0	19	1	22
Future Vol, veh/h	0	173	151	35	352	0	0	0	0	19	1	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	188	164	38	383	0	0	0	0	21	1	24

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	352	0	0	729	811	383
Stage 1	-	-	-	-	-	-	459	459	-
Stage 2	-	-	-	-	-	-	270	352	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1207	-	0	390	313	664
Stage 1	0	-	-	-	-	0	636	566	-
Stage 2	0	-	-	-	-	0	775	632	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1207	-	-	374	0	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	374	0	-
Stage 1	-	-	-	-	-	-	611	0	-
Stage 2	-	-	-	-	-	-	775	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.7	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1207	-	488
HCM Lane V/C Ratio	-	-	0.032	-	0.094
HCM Control Delay (s)	-	-	8.1	0	13.1
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	161	0	0	127	19	260	0	59	0	0	0
Future Vol, veh/h	31	161	0	0	127	19	260	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	175	0	0	138	21	283	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	159	0	-	-	-	0	390	401	175
Stage 1	-	-	-	-	-	-	242	242	-
Stage 2	-	-	-	-	-	-	148	159	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1420	-	0	0	-	-	614	538	868
Stage 1	-	-	0	0	-	-	798	705	-
Stage 2	-	-	0	0	-	-	880	766	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1420	-	-	-	-	-	597	0	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	0	-
Stage 1	-	-	-	-	-	-	776	0	-
Stage 2	-	-	-	-	-	-	880	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	634	1420	-	-	-
HCM Lane V/C Ratio	0.547	0.024	-	-	-
HCM Control Delay (s)	17.3	7.6	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	3.3	0.1	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	229	0	32	342	0	1	1	90	5	1	5
Future Vol, veh/h	0	229	0	32	342	0	1	1	90	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	249	0	35	372	0	1	1	98	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	372	0	0	249	0	0	694	690	249	739	690	372
Stage 1	-	-	-	-	-	-	249	249	-	441	441	-
Stage 2	-	-	-	-	-	-	445	441	-	298	249	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1186	-	-	1317	-	-	357	368	790	333	368	674
Stage 1	-	-	-	-	-	-	755	701	-	595	577	-
Stage 2	-	-	-	-	-	-	592	577	-	711	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1186	-	-	1317	-	-	344	356	790	284	356	674
Mov Cap-2 Maneuver	-	-	-	-	-	-	344	356	-	284	356	-
Stage 1	-	-	-	-	-	-	755	701	-	595	558	-
Stage 2	-	-	-	-	-	-	567	558	-	622	701	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	10.4	14.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	769	1186	-	-	1317	-	-	395
HCM Lane V/C Ratio	0.13	-	-	-	0.026	-	-	0.03
HCM Control Delay (s)	10.4	0	-	-	7.8	0	-	14.4
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	225	1	1	347	2	4
Future Vol, veh/h	225	1	1	347	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	1	1	377	2	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	246	0	624	245
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1320	-	449	794
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	692	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1320	-	449	794
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	632	-	-	1320	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	10.8	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	224	2	1	348	2	2
Future Vol, veh/h	224	2	1	348	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	243	2	1	378	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	246	0	625	245
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1320	-	449	794
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1320	-	449	794
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	574	-	-	1320	-
HCM Lane V/C Ratio	0.008	-	-	0.001	-
HCM Control Delay (s)	11.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	197	167	239	651	0	0	0	0	50	2	76
Future Vol, veh/h	0	197	167	239	651	0	0	0	0	50	2	76
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	214	182	260	708	0	0	0	0	54	2	83

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	396	0	0	1532	1623	708
Stage 1	-	-	-	-	-	-	1227	1227	-
Stage 2	-	-	-	-	-	-	305	396	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1163	-	0	128	103	435
Stage 1	0	-	-	-	-	0	277	251	-
Stage 2	0	-	-	-	-	0	748	604	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1163	-	-	81	0	435
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	0	-
Stage 1	-	-	-	-	-	-	175	0	-
Stage 2	-	-	-	-	-	-	748	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.4	98
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1163	-	159
HCM Lane V/C Ratio	-	-	0.223	-	0.875
HCM Control Delay (s)	-	-	9	0	98
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.9	-	6.1

Intersection	
Int Delay, s/veh	29.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	217	0	0	662	80	228	0	55	0	0	0
Future Vol, veh/h	30	217	0	0	662	80	228	0	55	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	236	0	0	720	87	248	0	60	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	807	0	-	-	-	0	1064	1108	236
Stage 1	-	-	-	-	-	-	301	301	-
Stage 2	-	-	-	-	-	-	763	807	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	818	-	0	0	-	-	~ 247	210	803
Stage 1	-	-	0	0	-	-	751	665	-
Stage 2	-	-	0	0	-	-	460	394	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	818	-	-	-	-	-	~ 236	0	803
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 236	0	-
Stage 1	-	-	-	-	-	-	716	0	-
Stage 2	-	-	-	-	-	-	460	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	131.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	274	818	-	-	-
HCM Lane V/C Ratio	1.123	0.04	-	-	-
HCM Control Delay (s)	131.8	9.6	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	13	0.1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	545	85	141	407	0	0	0	0	81	1	39
Future Vol, veh/h	0	545	85	141	407	0	0	0	0	81	1	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	592	92	153	442	0	0	0	0	88	1	42

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	685	0	0	1388	1434	442
Stage 1	-	-	-	-	-	-	749	749	-
Stage 2	-	-	-	-	-	-	639	685	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	908	-	0	157	134	615
Stage 1	0	-	-	-	-	0	467	419	-
Stage 2	0	-	-	-	-	0	526	448	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	908	-	-	122	0	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	0	-
Stage 1	-	-	-	-	-	-	363	0	-
Stage 2	-	-	-	-	-	-	526	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	80.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	908	-	165
HCM Lane V/C Ratio	-	-	0.169	-	0.797
HCM Control Delay (s)	-	-	9.8	0	80.7
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.6	-	5.2

Intersection	
Int Delay, s/veh	132.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	533	0	0	283	71	265	0	178	0	0	0
Future Vol, veh/h	93	533	0	0	283	71	265	0	178	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	579	0	0	308	77	288	0	193	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	385	0	-	-	-	0	1128	1167	579
Stage 1	-	-	-	-	-	-	782	782	-
Stage 2	-	-	-	-	-	-	346	385	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1173	-	0	0	-	-	~ 226	194	515
Stage 1	-	-	0	0	-	-	451	405	-
Stage 2	-	-	0	0	-	-	716	611	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1173	-	-	-	-	-	~ 197	0	515
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 197	0	-
Stage 1	-	-	-	-	-	-	394	0	-
Stage 2	-	-	-	-	-	-	716	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	$ 423.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	262	1173	-	-	-
HCM Lane V/C Ratio	1.838	0.086	-	-	-
HCM Control Delay (s)	$ 423.8	8.4	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	32.9	0.3	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	197	167	239	651	0	0	0	0	50	2	76
Future Vol, veh/h	0	197	167	239	651	0	0	0	0	50	2	76
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	214	182	260	708	0	0	0	0	54	2	83

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	396	0	0	1532	1623	708
Stage 1	-	-	-	-	-	-	1227	1227	-
Stage 2	-	-	-	-	-	-	305	396	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1163	-	0	128	103	435
Stage 1	0	-	-	-	-	0	277	251	-
Stage 2	0	-	-	-	-	0	748	604	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1163	-	-	81	0	435
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	0	-
Stage 1	-	-	-	-	-	-	175	0	-
Stage 2	-	-	-	-	-	-	748	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.4	98
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1163	-	159
HCM Lane V/C Ratio	-	-	0.223	-	0.875
HCM Control Delay (s)	-	-	9	0	98
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.9	-	6.1

Intersection	
Int Delay, s/veh	29.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	217	0	0	662	80	228	0	55	0	0	0
Future Vol, veh/h	30	217	0	0	662	80	228	0	55	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	236	0	0	720	87	248	0	60	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	807	0	-	-	-	0	1064	1108	236
Stage 1	-	-	-	-	-	-	301	301	-
Stage 2	-	-	-	-	-	-	763	807	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	818	-	0	0	-	-	~ 247	210	803
Stage 1	-	-	0	0	-	-	751	665	-
Stage 2	-	-	0	0	-	-	460	394	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	818	-	-	-	-	-	~ 236	0	803
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 236	0	-
Stage 1	-	-	-	-	-	-	716	0	-
Stage 2	-	-	-	-	-	-	460	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	131.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	274	818	-	-	-
HCM Lane V/C Ratio	1.123	0.04	-	-	-
HCM Control Delay (s)	131.8	9.6	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	13	0.1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	338	0	59	668	0	0	1	21	5	1	5
Future Vol, veh/h	0	338	0	59	668	0	0	1	21	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	367	0	64	726	0	0	1	23	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	726	0	0	367	0	0	1225	1221	367	1233	1221	726
Stage 1	-	-	-	-	-	-	367	367	-	854	854	-
Stage 2	-	-	-	-	-	-	858	854	-	379	367	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	877	-	-	1192	-	-	156	180	678	154	180	425
Stage 1	-	-	-	-	-	-	653	622	-	353	375	-
Stage 2	-	-	-	-	-	-	352	375	-	643	622	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	877	-	-	1192	-	-	143	164	678	138	164	425
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	164	-	138	164	-
Stage 1	-	-	-	-	-	-	653	622	-	353	341	-
Stage 2	-	-	-	-	-	-	315	341	-	620	622	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	11.3	23.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	593	877	-	-	1192	-	-	203
HCM Lane V/C Ratio	0.04	-	-	-	0.054	-	-	0.059
HCM Control Delay (s)	11.3	0	-	-	8.2	0	-	23.8
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	337	3	3	670	1	1
Future Vol, veh/h	337	3	3	670	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	366	3	3	728	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	370	0	1103	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	735	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1189	-	234	677
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	474	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1189	-	233	677
Mov Cap-2 Maneuver	-	-	-	-	233	-
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	472	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	347	-	-	1189	-
HCM Lane V/C Ratio	0.006	-	-	0.003	-
HCM Control Delay (s)	15.4	-	-	8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	336	6	26	645	1	4
Future Vol, veh/h	336	6	26	645	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	365	7	28	701	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	372	0	1126	368
Stage 1	-	-	-	-	368	-
Stage 2	-	-	-	-	758	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1186	-	227	677
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	463	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1186	-	218	677
Mov Cap-2 Maneuver	-	-	-	-	218	-
Stage 1	-	-	-	-	700	-
Stage 2	-	-	-	-	445	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	12.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	476	-	-	1186	-
HCM Lane V/C Ratio	0.011	-	-	0.024	-
HCM Control Delay (s)	12.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	545	85	141	407	0	0	0	0	81	1	39
Future Vol, veh/h	0	545	85	141	407	0	0	0	0	81	1	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	592	92	153	442	0	0	0	0	88	1	42

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	685	0	0	1388	1434	442
Stage 1	-	-	-	-	-	-	749	749	-
Stage 2	-	-	-	-	-	-	639	685	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	908	-	0	157	134	615
Stage 1	0	-	-	-	-	0	467	419	-
Stage 2	0	-	-	-	-	0	526	448	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	908	-	-	122	0	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	0	-
Stage 1	-	-	-	-	-	-	363	0	-
Stage 2	-	-	-	-	-	-	526	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	80.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	908	-	165
HCM Lane V/C Ratio	-	-	0.169	-	0.797
HCM Control Delay (s)	-	-	9.8	0	80.7
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.6	-	5.2

Intersection	
Int Delay, s/veh	132.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	533	0	0	283	71	265	0	178	0	0	0
Future Vol, veh/h	93	533	0	0	283	71	265	0	178	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	579	0	0	308	77	288	0	193	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	385	0	-	-	-	0	1128	1167	579
Stage 1	-	-	-	-	-	-	782	782	-
Stage 2	-	-	-	-	-	-	346	385	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1173	-	0	0	-	-	~ 226	194	515
Stage 1	-	-	0	0	-	-	451	405	-
Stage 2	-	-	0	0	-	-	716	611	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1173	-	-	-	-	-	~ 197	0	515
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 197	0	-
Stage 1	-	-	-	-	-	-	394	0	-
Stage 2	-	-	-	-	-	-	716	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	$ 423.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	262	1173	-	-	-
HCM Lane V/C Ratio	1.838	0.086	-	-	-
HCM Control Delay (s)	$ 423.8	8.4	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	32.9	0.3	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	535	0	32	414	0	1	1	90	5	1	5
Future Vol, veh/h	0	535	0	32	414	0	1	1	90	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	582	0	35	450	0	1	1	98	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	450	0	0	582	0	0	1105	1102	582	1151	1102	450
Stage 1	-	-	-	-	-	-	582	582	-	520	520	-
Stage 2	-	-	-	-	-	-	523	520	-	631	582	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1110	-	-	992	-	-	188	212	513	175	212	609
Stage 1	-	-	-	-	-	-	499	499	-	539	532	-
Stage 2	-	-	-	-	-	-	537	532	-	469	499	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1110	-	-	992	-	-	179	202	513	136	202	609
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	202	-	136	202	-
Stage 1	-	-	-	-	-	-	499	499	-	539	507	-
Stage 2	-	-	-	-	-	-	506	507	-	379	499	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	14.1	22.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	495	1110	-	-	992	-	-	220
HCM Lane V/C Ratio	0.202	-	-	-	0.035	-	-	0.054
HCM Control Delay (s)	14.1	0	-	-	8.8	0	-	22.3
HCM Lane LOS	B	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	531	3	1	419	2	4
Future Vol, veh/h	531	3	1	419	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	577	3	1	455	2	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	580	0	1037	579
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	458	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	994	-	256	515
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	994	-	256	515
Mov Cap-2 Maneuver	-	-	-	-	256	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	636	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	385	-	-	994	-
HCM Lane V/C Ratio	0.017	-	-	0.001	-
HCM Control Delay (s)	14.5	-	-	8.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	532	2	1	420	2	2
Future Vol, veh/h	532	2	1	420	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	578	2	1	457	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	580	0	1038	579
Stage 1	-	-	-	-	579	-
Stage 2	-	-	-	-	459	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	994	-	256	515
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	636	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	994	-	256	515
Mov Cap-2 Maneuver	-	-	-	-	256	-
Stage 1	-	-	-	-	560	-
Stage 2	-	-	-	-	635	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	342	-	-	994	-
HCM Lane V/C Ratio	0.013	-	-	0.001	-
HCM Control Delay (s)	15.7	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Vacaville LDK Transportation Impact Analysis Report

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1 CHAPTER 1: INTRODUCTION AND SUMMARY

The City of Vacaville has hired DKS associates to perform a Transportation Impact Analysis (TIA) for the proposed LDK development project. The proposed development site is located on the south side of Midway Road immediately west of Interstate 505 and includes three separate warehouse buildings with a total of 744,700 square feet of gross floor area. This report summarizes the results of the TIA and summarizes the operational impacts to the surrounding infrastructure attributable to the proposed development. The study area is presented in Figure 1. The current proposed overall site plan is included in Appendix A.

1.1 Study Intersections

Below is a list of the five study intersections identified for this analysis. These locations were selected based on discussion between DKS Associates and City of Vacaville staff.

1. Midway Road & I-505 Northbound Ramps
2. Midway Road & I-505 Southbound Ramps
3. Midway Road & Hartley Road/Eastern Site Access (Project Scenarios Only)
4. Midway Road & Center Site Access (Project Scenarios Only)
5. Midway Road & Western Site Access (Project Scenarios Only)

Counts for the ramp locations from April and May of 2015 were provided by the City of Vacaville for analysis. Through movement volumes at the project site driveways were calculated to be consistent with the provided ramp volumes. Some minor volume balancing was done as the traffic counts were collected on different days.

1.2 Summary of Results

This analysis finds that the project does not cause significant impacts to traffic delay at any of the study locations under Existing Plus Project or Existing Plus Baseline Plus Project conditions, however, the intersection of Midway Road and I-505 northbound ramps does experience a significant increase in delay under Cumulative Plus Project conditions. Mitigation measures recommended for the project include a far share contribution toward the installation of a roundabout (currently being added to the City's Capital Improvement Plan and Traffic Impact Fees) and provision of a continuous two way left turn lane to improve safety at the project driveways. The Level of Service (LOS) analysis is summarized in Table 1.

Figure 1: Study Area Map

● Study Intersections

○ Project Driveway Intersections

Table 1: Summary of Intersection Operations for All Scenarios

Location	Intersection Control	Existing Conditions				Existing + Project Conditions				
		AM		PM		AM		PM		
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
Midway Road & I-505 Northbound Ramps	TWSC	2.9	A	7.6	A	3.9	A	8.5	A	No Mitigation Required
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A	1.2	A	1.1	A	
Midway Road & Eastern Site Access	TWSC	N/A		N/A		1.4	A	2.0	A	
Midway Road & Center Site Access	TWSC	N/A		N/A		0.1	A	0.1	A	
Midway Road & Western Site Access	TWSC	N/A		N/A		0.5	A	0.1	A	
Location	**Intersection Control**	**Existing + Baseline Conditions**				**Existing + Baseline + Project Conditions**				
		AM		PM		AM		PM		
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	
Midway Road & I-505 Northbound Ramps	TWSC	3.1	A	7.7	A	4.0	A	8.8	A	
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A	1.2	A	1.1	A	
Midway Road & Eastern Site Access	TWSC	N/A		N/A		1.4	A	2.0	A	
Midway Road & Center Site Access	TWSC	N/A		N/A		0.1	A	0.1	A	
Midway Road & Western Site Access	TWSC	N/A		N/A		0.5	A	0.1	A	
Location	**Intersection Control**	**2035 Conditions**				**2035 + Project Conditions**				**2035 + Project Conditions Mitigated***			
		AM		PM		AM		PM		AM		PM	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	29.6	D	**>90**	**F**	**62.0**	**F**	**>90**	**F**	15.1	B	10.6	B
Midway Road & I-505 Southbound Ramps	TWSC	10.6	B	8.6	A	16.6	C	11.9	B	No Mitigation Required			
Midway Road & Eastern Site Access	TWSC	N/A		N/A		0.9	A	1.7	A				
Midway Road & Center Site Access	TWSC	N/A		N/A		0.0	A	0.1	A				
Midway Road & Western Site Access	TWSC	N/A		N/A		0.3	A	0.1	A				

*Mitigation Includes installation of a single lane roundabout at Midway and the I-505 NB Ramps

2 ANALYSIS ASSUMPTIONS AND METHODOLOGIES

The following section summarizes the assumptions and methodologies used for analysis. The trip generation and distribution discussed in this section were utilized for all project analysis scenarios.

2.1 Trip Generation

Trip Generation is the method used to estimate the number of vehicles added to site driveway and the adjacent roadway network by a development during a specified period (ie PM peak hour). For this study, the ITE Trip Generation Manual 10th Edition was utilized to calculate the trips generated by the project. After discussion with City staff, the average trip generation rate for ITE land use code 150: Warehousing was used to determine the total number of project trips. Given this land use assumption, no pass-by trip or diverted trip reductions were calculated. A summary of the project trip generation is included in Table 2.

Table 2: Project Trip Generation

Land Use	ITE Code	Size (KSF)	Daily Trip Rate/ KSF	AM Peak Hour Vehicle Trip Rate/KSF			PM Peak Hour Vehicle Trip Rate/KSF		
				Total	In %	Out %	Total	In %	Out %
Warehousing	150	744.7	1.74	0.17	77	23	0.19	27	73
Land Use	**ITE Code**	**Daily Trips**		**AM Peak Hour Vehicle Trips**			**PM Peak Hour Vehicle Trips**		
				Total	In	Out	Total	In	Out
Warehousing 150	150	1296		127	98	29	141	39	102

Source: ITE Trip Generation Manual 10th Edition
*KSF: 1000 square feet

2.2 Trip Distribution

Trip distribution describes where the project trips are going once they leave the development site. For this study, the trip distribution was determined by utilizing the City of Vacaville travel demand model. Peak hour trips coming from and going to the project site were tracked through the roadway network to determine percentages of total trips using each route to the project site. These percentages were then used with the ITE based trip generation previously discussed to determine the specific added traffic to each study intersection. The project trip distribution is summarized in Table 3 and the project trips added to each intersection are summarized in Figure 2.

Figure 2: Project Trip Distribution

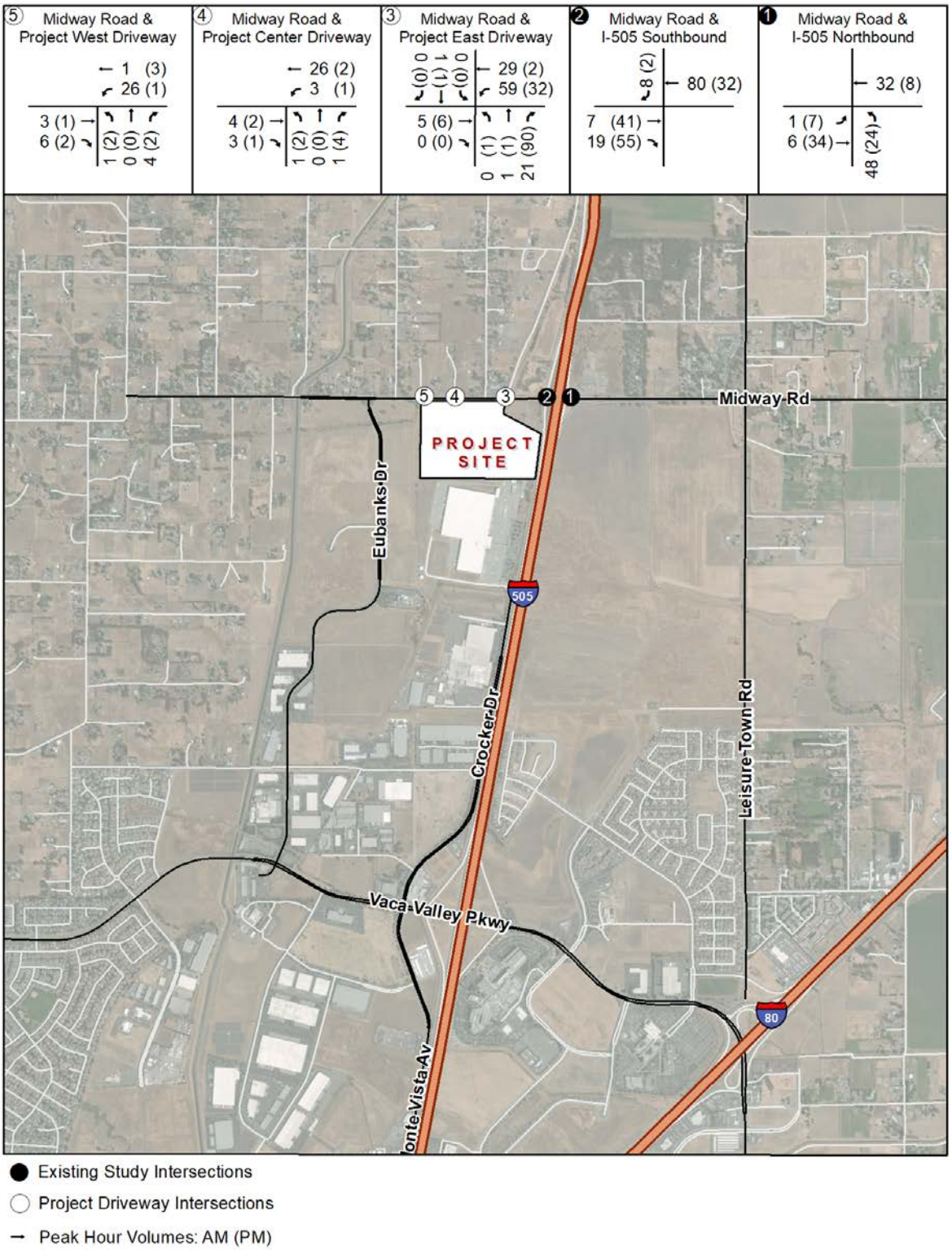


Table 3: Project Trip Distribution

Location	AM Trip Distribution		PM Trip Distribution	
	Inbound (%)	Outbound (%)	Inbound (%)	Outbound (%)
Midway Rd (West)	9	6	9	5
Midway Rd (East)	33	22	20	34
I-505 Northbound	50	5	66	8
I-505 Southbound	8	67	5	53

2.3 Level of Service

Intersections were evaluated utilizing the Level of Service (LOS) methodology outlined in the 2010 Highway Capacity Manual (HCM) as applied through Synchro/SimTraffic 9 software suite. This methodology estimates the average delay experienced by drivers going through the intersection and assigns one of six letter grades, ranging from A to F. These letter grades are based on driver perspective of the facility where LOS A represents the best operating condition and LOS F represents conditions that are near or over the capacity of the roadway. Table 4 summarizes the delay thresholds, in seconds, for each LOS at signalized and unsignalized locations.

Table 4: Level of Service Thresholds

Level of Service (LOS)	Total Delay Per Vehicle	
	Signalized Intersections	Unsignalized Intersections*
A	< 10	< 10
B	> 10 and < 20	> 10 and < 15
C	> 20 and < 35	> 15 and < 25
D	> 35 and < 55	> 25 and < 35
E	> 55 and < 80	> 35 and < 50
F	> 80	> 50

Source: Highway Capacity Manual, 2010.

2.4 City Level of Service Policy

The City of Vacaville General Plan has the following policies relating to level of service and traffic congestion:

- **Policy TR-P3.1** - Endeavor to maintain LOS C as the LOS goal at all intersections and interchanges to facilitate the safe and efficient movement of people, goods, and services. Strive to design improvements to provide a LOS goal of C, based on the City's most recent 20+ year traffic forecast including signalized and unsignalized intersections.
- **Policy TR-P3.2** - At signalized and all-way stop control intersections, LOS mid-D shall be the LOS significance threshold. At two-way stop control intersections, LOS D shall be the LOS significance threshold.
- **Policy TR-P3.3** - To allow for infill development and higher density development at transit centers, the LOS significance threshold shall be LOS D at signalized and all-way stop control intersections in the Downtown Urban High Density Residential Overlay District or other Priority Development Areas (PDA) designated by the City. At two-way stop controlled intersections in these areas, the overall LOS significance threshold shall be LOS mid-E.
- **Policy TR-P3.4** - The City may allow LOS above the established LOS significance thresholds for a particular location as an interim level of service where improvements are programmed by the City that will improve the service to an acceptable level.
- **Policy TR-P3.5** - The City may allow LOS above the established LOS significance thresholds for a particular location on the basis of specific findings described in Chapter 14.13 of the Vacaville Land Use and Development Code, Traffic Impact Mitigation Ordinance.

None of the intersections analyzed fall in a city Priority Development Area and thus the thresholds set forth in Policy TR-P3.2 apply to all locations.

3 EXISTING CONDITIONS ANALYSIS

Existing conditions analysis establishes baseline traffic conditions for which all other scenarios can be compared. Existing turning movement counts from spring of 2015 were provided by the City of Vacaville for the two existing intersections to be studied; Midway Road at I-505 northbound ramps and Midway Road at I-505 southbound ramps. These counts included the AM peak traffic period from 7:00 am – 9:00 am and the PM peak traffic period from 4:00 pm – 6:00 pm. The peak hour from each of these periods was analyzed. Some volume balancing was done on the count volumes to account for the counts being collected on different days.

Existing geometry, including number of lanes and storage capacity, was obtained from current aerial images. All of the study intersections are side street stop controlled with no traffic control on Midway Road. Figures showing the lane geometries and traffic volumes for analysis can be found in Appendix B.

3.1 Roadway Network

The site is primarily served by Midway Road and I-505. These roadways are described below.

Interstate 505 (I-505)- is an interstate spur which connects I-80 in Vacaville to I-5 in northern Yolo County. Within Vacaville city limits I-505 is a four lane divided freeway with a 65 mph speed limit. A full access interchange to this facility is located at Midway Road immediately east of the project site.

Midway Road- is a rural two-lane roadway which runs east-west at the northern city limit of Vacaville. This roadway currently primarily serves local traffic.

3.2 Existing Conditions Intersection Operations

Table 5 provides a summary of the existing operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C.

Table 5: Existing Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	2.9	A	7.6	A
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A

TWSC=Two Way Stop Control

3.3 Existing with Project Intersection Operations

Table 6 provides a summary of existing with project operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C. There are no project impacts under existing with project conditions. Although delay increases slightly at the two existing intersections, the intersections remain at LOS A and increases in delay are less than five seconds at each intersection. The three site access intersections are also projected to operate at LOS A.

Table 6: Existing with Project Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	3.9	A	8.5	A
Midway Road & I-505 Southbound Ramps	TWSC	1.2	A	1.1	A
Midway Road & Eastern Site Access	TWSC	1.4	A	2.0	A
Midway Road & Center Site Access	TWSC	0.1	A	0.1	A
Midway Road & Western Site Access	TWSC	0.5	A	0.1	A

4 EXISTING PLUS APPROVED/PENDING (BASELINE) CONDITIONS

Existing plus baseline conditions is used to establish that the combined effects of this project with other nearby approved or pending projects would not cause impacts. After discussion with city staff, one baseline project was identified on Eubanks Drive.

4.1 Trip Generation and Distribution

Table 7 shows the trip generation developed for the background project. Figure 3 shows the trips that are assigned to the study intersections.

Table 7: Trip Generation of Approved/Pending Development

Land Use	ITE Code	Size (KSF)	Daily Trip Rate/ KSF	AM Peak Hour Vehicle Trip Rate/KSF			PM Peak Hour Vehicle Trip Rate/KSF		
				Total	In %	Out %	Total	In %	Out %
Warehousing	150	263.4	1.74	0.17	77	23	0.19	27	73
Land Use	**ITE Code**	**Daily Trips**		**AM Peak Hour Vehicle Trips**			**PM Peak Hour Vehicle Trips**		
				Total	**In**	**Out**	**Total**	**In**	**Out**
Warehousing 150	150	458		45	35	10	50	13	37

4.2 Existing Plus Baseline Intersection Operations

Table 8 provides a summary of the existing with baseline operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C.

Table 8: Existing Plus Baseline Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	3.1	A	7.7	A
Midway Road & I-505 Southbound Ramps	TWSC	1.3	A	1.2	A

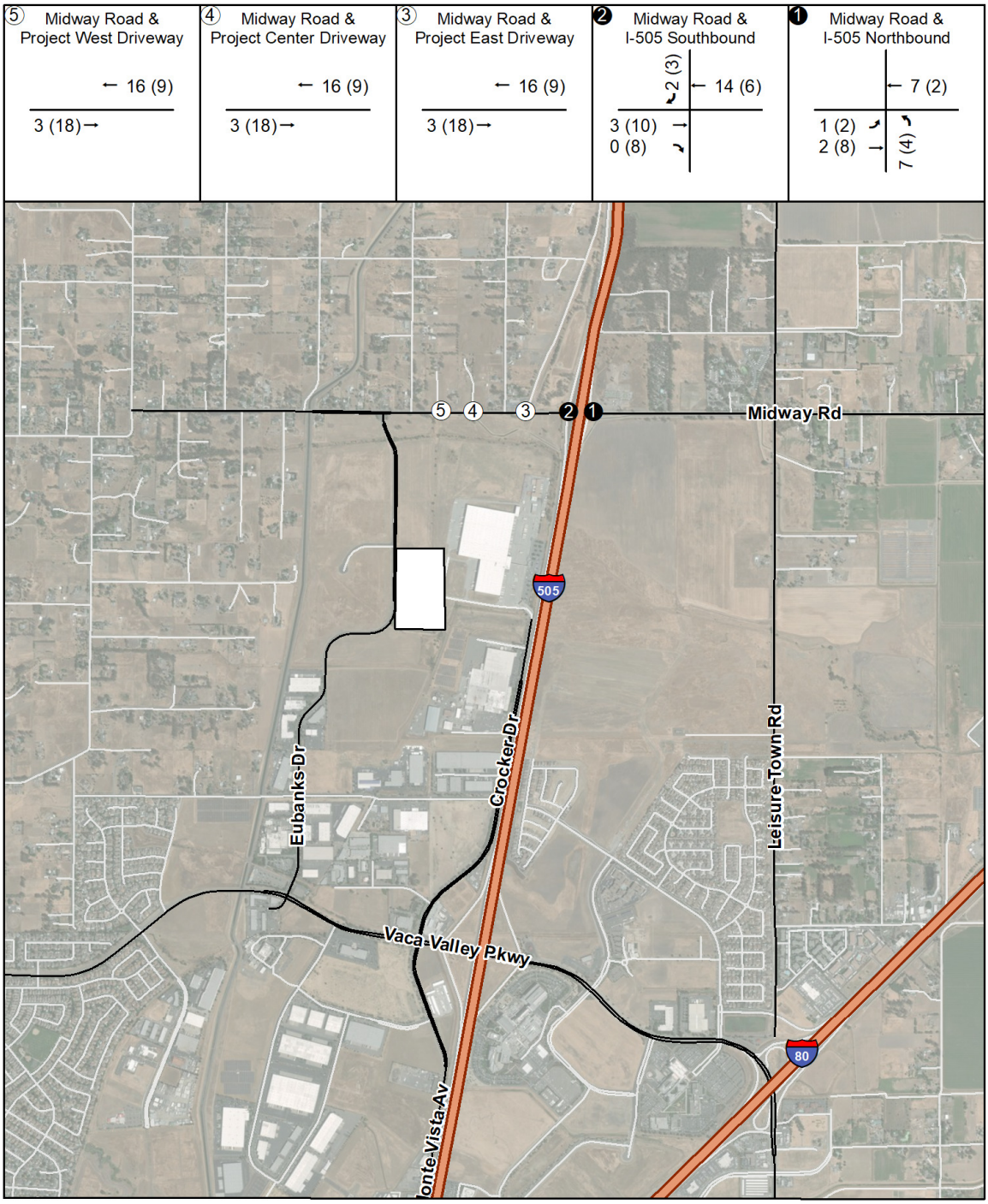
4.3 Existing Plus Baseline with Project Intersection Operations

Table 9 provides a summary of existing plus baseline with project operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C. There are no project impacts under existing plus baseline with project conditions.

Table 9: Existing Plus Baseline with Project Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	4.0	A	8.8	A
Midway Road & I-505 Southbound Ramps	TWSC	1.2	A	1.1	A
Midway Road & Eastern Site Access	TWSC	1.4	A	2.0	A
Midway Road & Center Site Access	TWSC	0.1	A	0.1	A
Midway Road & Western Site Access	TWSC	0.5	A	0.1	A

Figure 3: Approved/Pending Project Trip Distribution



● Existing Study Intersections

○ Project Driveway Intersections

→ Peak Hour Volumes: AM (PM)

▭ Baseline Project

5 CUMULATIVE YEAR CONDITIONS

The cumulative year condition represents a planning horizon for the project study area. Based on input from city staff, the cumulative condition is based on a 2035 horizon with build out of the area surrounding the proposed project (without the proposed project).

5.1 Future Land Use Assumptions

The cumulative no project condition is based on City of Vacaville 20-year (2035) horizon land use forecasts, with build out of land uses on vacant land generally bounded by Midway Road to the north, Eubanks Drive to the west, Vaca Valley Parkway to the south, and I-505 to the east. The site of the proposed project represents a portion of that area, but is assumed to be vacant for the cumulative no project scenario.

5.2 Future Intersection Operations

Table 10 provides a summary of the future operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C.

Table 10: Future Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	29.6	D	**>90**	**F**
Midway Road & I-505 Southbound Ramps	TWSC	10.6	B	8.6	A

5.3 Future with Project Intersection Operations

Table 11 provides a summary of future plus project operating conditions at the study locations. The detailed Synchro analysis sheets are provided in Appendix C. There is one project impact under future with project conditions. During the AM peak hour, Midway Road and the I-505 Northbound Ramps would operate at LOC with average delay of 29.6 seconds without project and would degrade to LOS F with 62.0 seconds of delay with the project. During the PM peak hour, this same intersection would operate at LOS F under both without and with project conditions.

The City of Vacaville is currently updating its Capital Improvement Program and associated Traffic Impact Fees (TIF) program. When adopted, this program will include a pair of roundabouts at the I-505/ Midway Road interchange. These roundabouts would improve capacity and safety over the existing two-way stop-controlled interchange. The AM peak hour impact would be mitigated by the proposed project paying its fair share toward the installation of a roundabout at the northbound ramp intersection with Midway Road. This improvement would improve the level of service at this location to LOS B (with 15.1 seconds of average delay) during the AM peak hour and LOS B (with 10.6 seconds of average delay) during the PM peak hour, as shown in Table 12.

Table 11: Future with Project Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	TWSC	**62.0**	**F**	**>90**	**F**
Midway Road & I-505 Southbound Ramps	TWSC	16.6	C	11.9	B
Midway Road & Eastern Site Access	TWSC	0.9	A	1.7	A
Midway Road & Center Site Access	TWSC	0.0	A	0.1	A
Midway Road & Western Site Access	TWSC	0.3	A	0.1	A

Table 12: Future with Project Mitigated Intersection Operations

Location	Intersection Control	AM		PM	
		Delay	LOS	Delay	LOS
Midway Road & I-505 Northbound Ramps	Roundabout	15.1	B	10.6	B

6 CONCLUSION

Based on the completed operations analysis, one significant impact has been identified related to the LDK development project at the intersection of I-505 northbound ramps and Midway Road. Improvement of the intersection to a roundabout will be added to the City's TIF and the project's payment of its fair share toward this improvement would represent a mitigation to this impact. In addition, a continuous two-way left turn lane is recommended along Midway Road in front of the proposed development. The state of California does not have specific left turn lane warrants; however, a review of the literature shows that the site access locations do justify left turn lanes. In *NCHRP Report 745*, general guidelines are put forth for left turn warrants based on existing research. Table 12 below from *Report 745* shows the volume warrant for a two-lane rural highway. Under existing conditions, the eastbound through volume is already over 200 vehicles per hour during the peaks and thus any amount of left turning traffic accessing the site would justify a left turn lane under this guidance.

A two-way left turn lane is further justified to maintain safe operations at the site driveways. Acknowledging that much of the entering and exiting volume to the site throughout the day will be tractor-trailers a two-way left turn lane that allows for two-stage left turns is recommended to improve safety. The Transportation Research Board's *Access Management Manual 2nd Edition* states roadways with a two-way left turn lane on average have a 35% lower crash rate than undivided roadways in addition to having capacity and delay benefits. It notes that these benefits are seen with daily volumes up to 24,000 daily vehicles at which point a solid median with left turn lanes should be considered.[1]

[1] Transportation Research Board *Access Management Manual 2nd Edition*, 2014

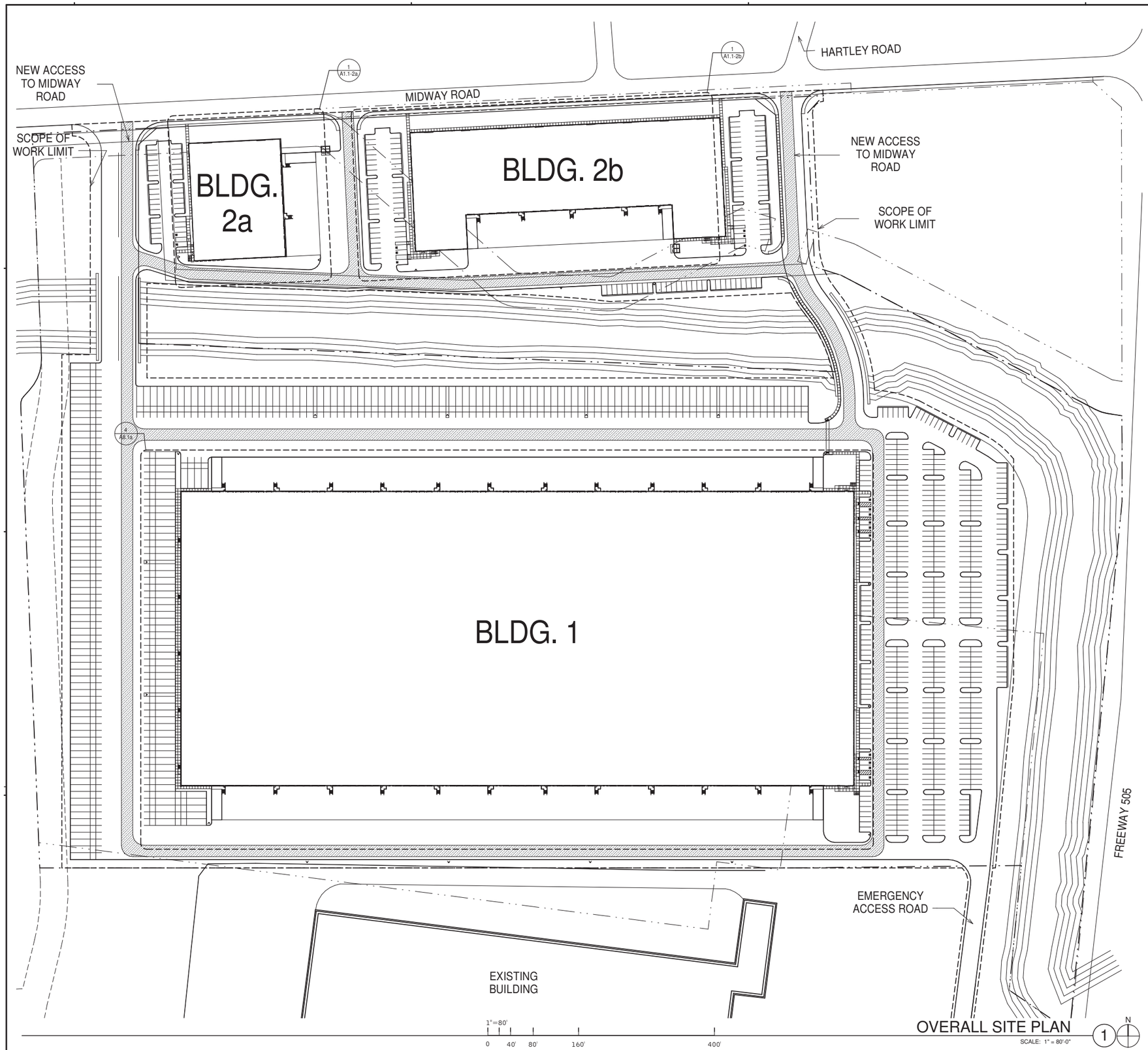
Table 12: Recommended Left-Turn Treatment Warrants for Rural Two-Lane Highways[2]

Left-Turn Lane Paek-Hour Volume (veh/hr)	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Three-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Bypass Lane	Four-Leg Intersection, Major Two-Lane Highway Peak-Hour Volume (veh/hr/ln) That Warrants a Left-Turn Lane
5	50	200	50	150
10	50	100	<50	50
15	<50	100	<50	50
20	<50	50	<50	<50
25	<50	50	<50	<50
30	<50	50	<50	<50
35	<50	50	<50	<50
40	<50	50	<50	<50
45	<50	50	<50	<50
50 or More	<50	50	<50	<50

[2] National Cooperative Research Board *NCHRP Report 745: Left-Turn Accommodations at Unsignalized Intersections*, 2013

Appendix A
Proposed Site Plan

CAUTION: IF THIS SHEET IS NOT 24"x36" IT IS A REDUCED PRINT



OVERALL SITE PLAN

1 SCALE: 1" = 80'-0"

CHAPTER 10 - MEANS OF EGRESS (SEE OCCUPANCY AND EGRESS PLANS)

SITE DATA

SITE AREA 1:

LOT	1,849,593 S.F.	(42.46 ACRES)
BUILDING 1 AREA	617,760	S.F.
BUILDING COVERAGE	33	%
LANDSCAPE AREA	XXX,XXX	S.F.
LANDSCAPE COVERAGE	XXX	%
PARKING REQUIRED	1/2000	WAREHOUSE
WAREHOUSE	309	REQUIRED
ACCESSIBLE PARKING	10	REQUIRED
BUILDING 1		
STANDARD PARKING PROVIDED	492	STALLS @0.8/1000 S.F.
ACCESSIBLE PARKING PROVIDED	10	STALLS
TOTAL PARKING PROVIDED	502	STALLS
TRAILER PARKING PROVIDED	233	STALLS
TRUCK DOCKS		
DOCK-HIGH DOORS	112	
KNOCK-OUTS	20	
GRADE-LEVEL DOORS	4	

SITE AREA 2:

LOT (GROSS)	494,226 S.F.	(11.35 ACRES)
WETLANDS	129,306 S.F.	
LOT (NET)	364,920 S.F.	(8.38 ACRES)
BUILDING 2a AREA	33,696	S.F.
BUILDING 2b AREA	93,240	S.F.
TOTAL FOOTPRINT	126,936	S.F.
BUILDING COVERAGE (GROSS)	26	%
BUILDING COVERAGE (NET)	35	%
LANDSCAPE AREA	XXX,XXX	S.F.
LANDSCAPE COVERAGE	XXX	%
BUILDING 2a		
ACCESSIBLE PARKING REQUIRED	2	STALLS
STANDARD PARKING REQUIRED	36	STALLS @1.07/1000 S.F.
ACCESSIBLE PARKING PROVIDED	2	STALLS
TOTAL PARKING PROVIDED	38	STALLS
TRUCK DOCKS		
DOCK-HIGH DOORS	10	
KNOCK-OUTS	1	
GRADE-LEVEL DOORS	1	
BUILDING 2b		
ACCESSIBLE PARKING REQUIRED	5	STALLS
STANDARD PARKING PROVIDED	124	STALLS @1.33/1000 S.F.
ACCESSIBLE PARKING PROVIDED	6	STALLS
TOTAL PARKING PROVIDED	130	STALLS
TRUCK DOCKS		
DOCK-HIGH DOORS	24	
KNOCK-OUTS	4	
GRADE-LEVEL DOORS	2	

SITE LEGEND

PROPERTY LINE

FIRE HYDRANT (VERIFY LOCATION WITH CIVIL DRAWINGS)

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SITE PLAN

DATE	REMARKS

PA/PM:	P. NORCROSS
DRAWN BY.:	A.K.
JOB NO.:	SNR17-0043-00

SHEET
A1.1

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Appendix B
ITE Trip Generation for Land Use Code 150: Warehousing

Warehousing
(150)

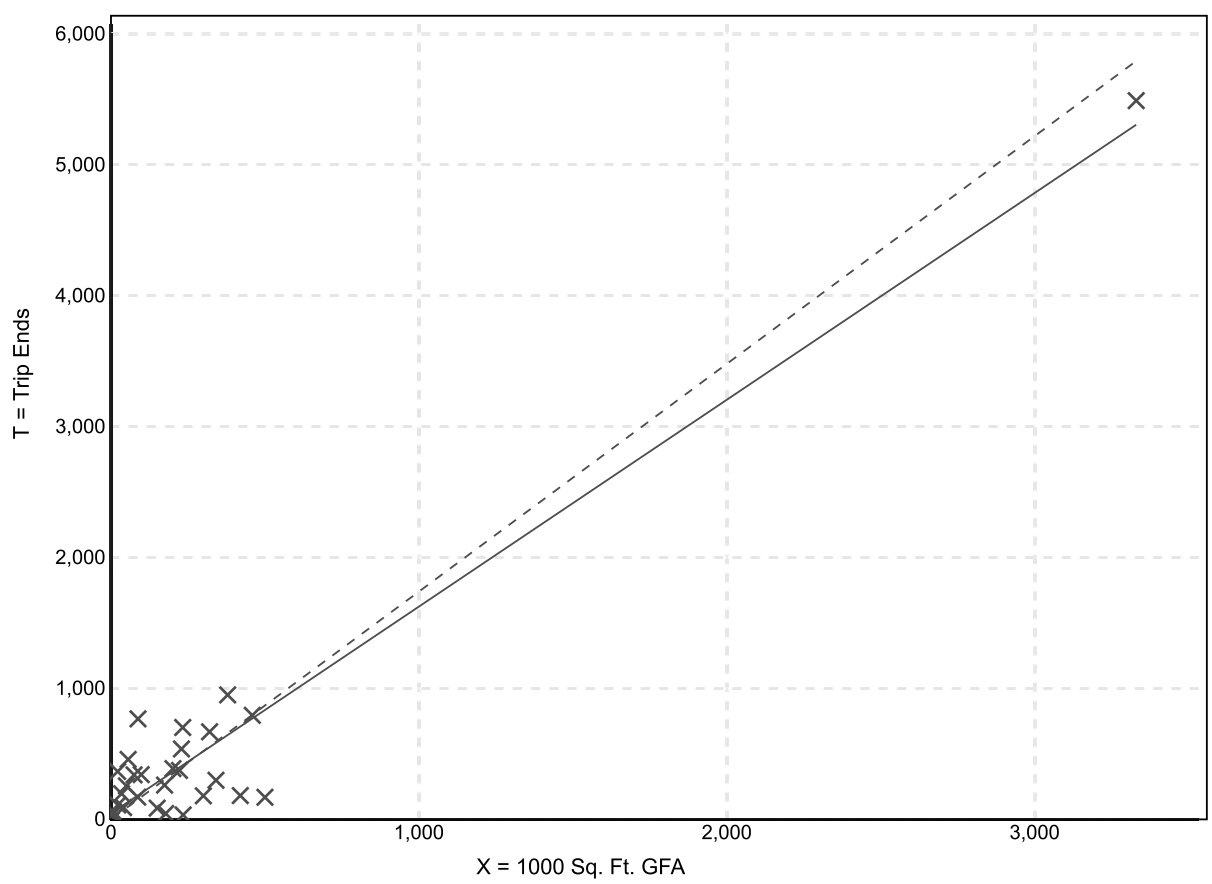
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. 1000 Sq. Ft. GFA: 285
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.74	0.15 - 16.93	1.55

Data Plot and Equation



Fitted Curve Equation: T = 1.58(X) + 45.54 **R^2= 0.93**

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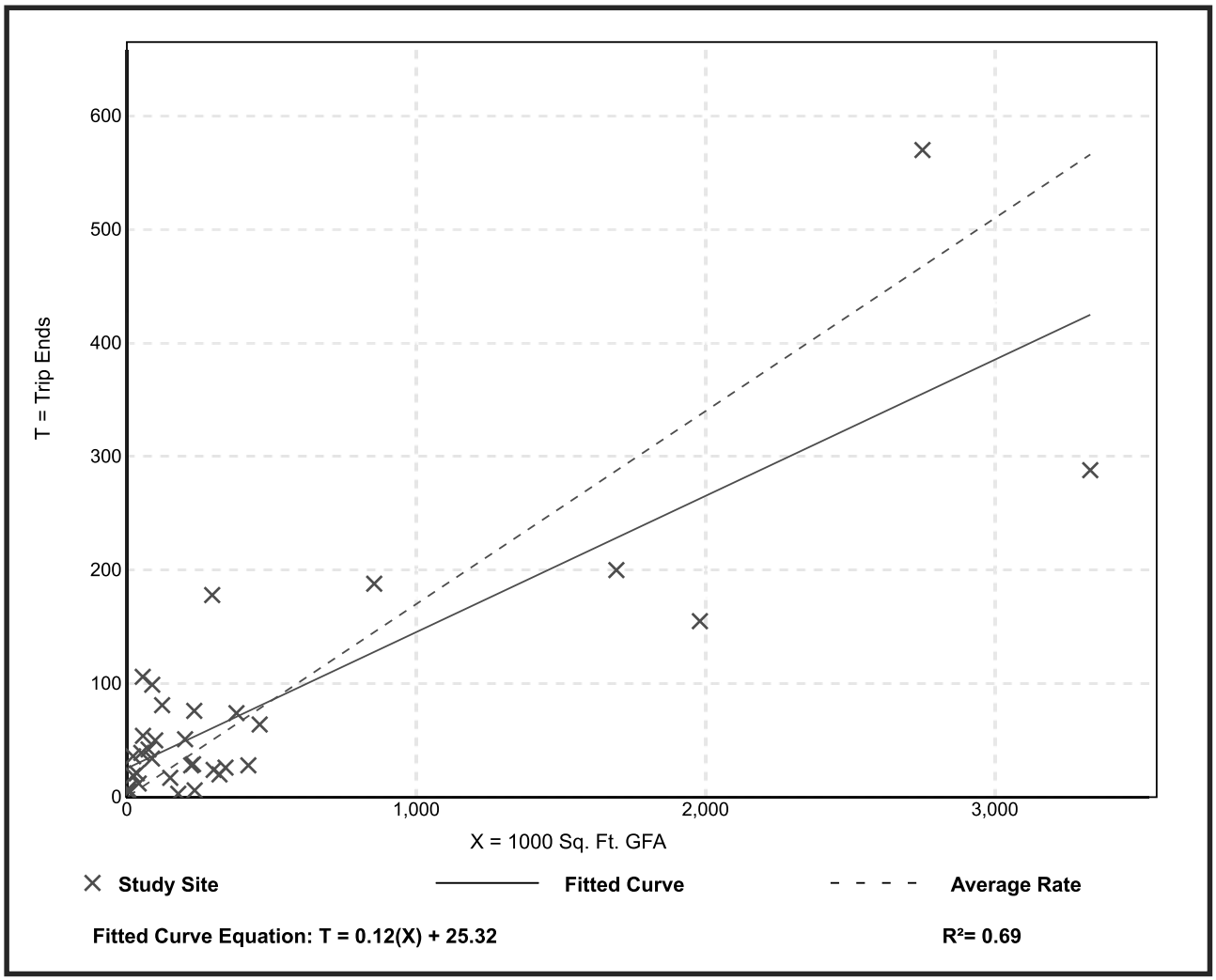
Warehousing
(150)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	34
Avg. 1000 Sq. Ft. GFA:	451
Directional Distribution:	77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.17	0.02 - 1.93	0.20

Data Plot and Equation



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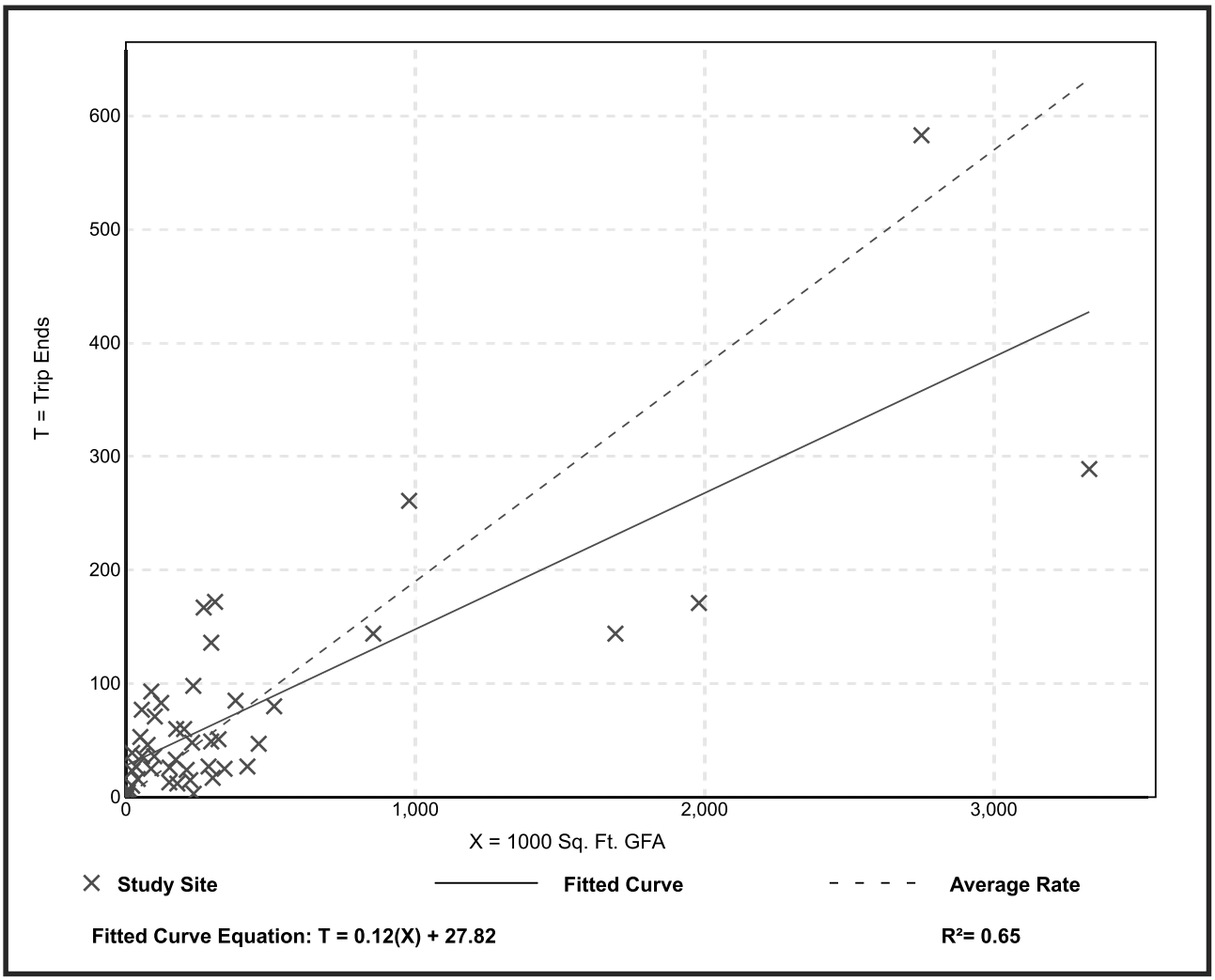
Warehousing
(150)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	47
Avg. 1000 Sq. Ft. GFA:	400
Directional Distribution:	27% entering, 73% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.19	0.01 - 1.80	0.18

Data Plot and Equation



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Appendix C
Synchro and Sidra Outputs

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	120	188	31	134	0	0	0	0	13	2	24
Future Vol, veh/h	0	120	188	31	134	0	0	0	0	13	2	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	130	204	34	146	0	0	0	0	14	2	26

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	335	0	0	446	548	146
Stage 1	-	-	-	-	-	-	213	213	-
Stage 2	-	-	-	-	-	-	233	335	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1224	-	0	570	444	901
Stage 1	0	-	-	-	-	0	823	726	-
Stage 2	0	-	-	-	-	0	806	643	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1224	-	-	553	0	901
Mov Cap-2 Maneuver	-	-	-	-	-	-	553	0	-
Stage 1	-	-	-	-	-	-	798	0	-
Stage 2	-	-	-	-	-	-	806	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.5	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1224	-	738
HCM Lane V/C Ratio	-	-	0.028	-	0.057
HCM Control Delay (s)	-	-	8	0	10.2
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	117	0	0	108	18	57	0	29	0	0	0
Future Vol, veh/h	16	117	0	0	108	18	57	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	127	0	0	117	20	62	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	137	0	-	-	-	0	289	299	127
Stage 1	-	-	-	-	-	-	162	162	-
Stage 2	-	-	-	-	-	-	127	137	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1447	-	0	0	-	-	702	613	923
Stage 1	-	-	0	0	-	-	867	764	-
Stage 2	-	-	0	0	-	-	899	783	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1447	-	-	-	-	-	693	0	923
Mov Cap-2 Maneuver	-	-	-	-	-	-	693	0	-
Stage 1	-	-	-	-	-	-	856	0	-
Stage 2	-	-	-	-	-	-	899	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	757	1447	-	-	-
HCM Lane V/C Ratio	0.123	0.012	-	-	-
HCM Control Delay (s)	10.4	7.5	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.4	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	122	88	35	314	0	0	0	0	19	1	17
Future Vol, veh/h	0	122	88	35	314	0	0	0	0	19	1	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	133	96	38	341	0	0	0	0	21	1	18

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	228	0	0	597	645	341
Stage 1	-	-	-	-	-	-	417	417	-
Stage 2	-	-	-	-	-	-	180	228	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1340	-	0	466	391	701
Stage 1	0	-	-	-	-	0	665	591	-
Stage 2	0	-	-	-	-	0	851	715	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1340	-	-	450	0	701
Mov Cap-2 Maneuver	-	-	-	-	-	-	450	0	-
Stage 1	-	-	-	-	-	-	642	0	-
Stage 2	-	-	-	-	-	-	851	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.8	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1340	-	542
HCM Lane V/C Ratio	-	-	0.028	-	0.074
HCM Control Delay (s)	-	-	7.8	0	12.2
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	7.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	119	0	0	117	19	232	0	59	0	0	0
Future Vol, veh/h	22	119	0	0	117	19	232	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	129	0	0	127	21	252	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	148	0	-	-	-	0	315	325	129
Stage 1	-	-	-	-	-	-	177	177	-
Stage 2	-	-	-	-	-	-	138	148	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1434	-	0	0	-	-	678	593	921
Stage 1	-	-	0	0	-	-	854	753	-
Stage 2	-	-	0	0	-	-	889	775	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1434	-	-	-	-	-	666	0	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	666	0	-
Stage 1	-	-	-	-	-	-	839	0	-
Stage 2	-	-	-	-	-	-	889	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	706	1434	-	-	-
HCM Lane V/C Ratio	0.448	0.017	-	-	-
HCM Control Delay (s)	14.2	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	2.3	0.1	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	127	207	31	214	0	0	0	0	13	2	32
Future Vol, veh/h	0	127	207	31	214	0	0	0	0	13	2	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	138	225	34	233	0	0	0	0	14	2	35

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	363	0	0	551	663	233
Stage 1	-	-	-	-	-	-	300	300	-
Stage 2	-	-	-	-	-	-	251	363	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1196	-	0	495	382	806
Stage 1	0	-	-	-	-	0	752	666	-
Stage 2	0	-	-	-	-	0	791	625	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1196	-	-	479	0	806
Mov Cap-2 Maneuver	-	-	-	-	-	-	479	0	-
Stage 1	-	-	-	-	-	-	727	0	-
Stage 2	-	-	-	-	-	-	791	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1196	-	673
HCM Lane V/C Ratio	-	-	0.028	-	0.076
HCM Control Delay (s)	-	-	8.1	0	10.8
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	123	0	0	140	18	105	0	29	0	0	0
Future Vol, veh/h	17	123	0	0	140	18	105	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	134	0	0	152	20	114	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	172	0	-	-	-	0	333	343	134
Stage 1	-	-	-	-	-	-	171	171	-
Stage 2	-	-	-	-	-	-	162	172	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1405	-	0	0	-	-	662	579	915
Stage 1	-	-	0	0	-	-	859	757	-
Stage 2	-	-	0	0	-	-	867	756	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1405	-	-	-	-	-	653	0	915
Mov Cap-2 Maneuver	-	-	-	-	-	-	653	0	-
Stage 1	-	-	-	-	-	-	847	0	-
Stage 2	-	-	-	-	-	-	867	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	696	1405	-	-	-
HCM Lane V/C Ratio	0.209	0.013	-	-	-
HCM Control Delay (s)	11.5	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.8	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	308	0	59	187	0	0	1	21	5	1	5
Future Vol, veh/h	0	308	0	59	187	0	0	1	21	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	335	0	64	203	0	0	1	23	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	203	0	0	335	0	0	670	667	335	679	667	203
Stage 1	-	-	-	-	-	-	335	335	-	332	332	-
Stage 2	-	-	-	-	-	-	335	332	-	347	335	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1369	-	-	1224	-	-	371	380	707	366	380	838
Stage 1	-	-	-	-	-	-	679	643	-	681	644	-
Stage 2	-	-	-	-	-	-	679	644	-	669	643	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1369	-	-	1224	-	-	351	358	707	337	358	838
Mov Cap-2 Maneuver	-	-	-	-	-	-	351	358	-	337	358	-
Stage 1	-	-	-	-	-	-	679	643	-	681	606	-
Stage 2	-	-	-	-	-	-	634	606	-	646	643	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.9	10.5	12.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	677	1369	-	-	1224	-	-	466
HCM Lane V/C Ratio	0.035	-	-	-	0.052	-	-	0.026
HCM Control Delay (s)	10.5	0	-	-	8.1	0	-	12.9
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	307	3	3	189	1	1
Future Vol, veh/h	307	3	3	189	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	334	3	3	205	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	337	0	547	335
Stage 1	-	-	-	-	335	-
Stage 2	-	-	-	-	212	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1222	-	498	707
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	823	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1222	-	497	707
Mov Cap-2 Maneuver	-	-	-	-	497	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	821	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	584	-	-	1222	-
HCM Lane V/C Ratio	0.004	-	-	0.003	-
HCM Control Delay (s)	11.2	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	306	6	26	164	1	4
Future Vol, veh/h	306	6	26	164	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	333	7	28	178	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	339	0	571	336
Stage 1	-	-	-	-	336	-
Stage 2	-	-	-	-	235	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1220	-	482	706
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1220	-	470	706
Mov Cap-2 Maneuver	-	-	-	-	470	-
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	784	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1220	-
HCM Lane V/C Ratio	0.008	-	-	0.023	-
HCM Control Delay (s)	10.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	163	143	35	346	0	0	0	0	19	1	19
Future Vol, veh/h	0	163	143	35	346	0	0	0	0	19	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	177	155	38	376	0	0	0	0	21	1	21

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	333	0	0	707	785	376
Stage 1	-	-	-	-	-	-	452	452	-
Stage 2	-	-	-	-	-	-	255	333	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1226	-	0	402	325	670
Stage 1	0	-	-	-	-	0	641	570	-
Stage 2	0	-	-	-	-	0	788	644	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1226	-	-	386	0	670
Mov Cap-2 Maneuver	-	-	-	-	-	-	386	0	-
Stage 1	-	-	-	-	-	-	616	0	-
Stage 2	-	-	-	-	-	-	788	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.7	13
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1226	-	490
HCM Lane V/C Ratio	-	-	0.031	-	0.087
HCM Control Delay (s)	-	-	8	0	13
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	153	0	0	125	19	256	0	59	0	0	0
Future Vol, veh/h	29	153	0	0	125	19	256	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	166	0	0	136	21	278	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	157	0	-	-	-	0	375	386	166
Stage 1	-	-	-	-	-	-	229	229	-
Stage 2	-	-	-	-	-	-	146	157	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1423	-	0	0	-	-	626	548	878
Stage 1	-	-	0	0	-	-	809	715	-
Stage 2	-	-	0	0	-	-	881	768	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1423	-	-	-	-	-	610	0	878
Mov Cap-2 Maneuver	-	-	-	-	-	-	610	0	-
Stage 1	-	-	-	-	-	-	789	0	-
Stage 2	-	-	-	-	-	-	881	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	647	1423	-	-	-
HCM Lane V/C Ratio	0.529	0.022	-	-	-
HCM Control Delay (s)	16.6	7.6	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	3.1	0.1	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	211	0	32	333	0	1	1	90	5	1	5
Future Vol, veh/h	0	211	0	32	333	0	1	1	90	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	229	0	35	362	0	1	1	98	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	362	0	0	229	0	0	664	661	229	711	661	362
Stage 1	-	-	-	-	-	-	229	229	-	432	432	-
Stage 2	-	-	-	-	-	-	435	432	-	279	229	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1197	-	-	1339	-	-	374	383	810	348	383	683
Stage 1	-	-	-	-	-	-	774	715	-	602	582	-
Stage 2	-	-	-	-	-	-	600	582	-	728	715	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1197	-	-	1339	-	-	361	370	810	298	370	683
Mov Cap-2 Maneuver	-	-	-	-	-	-	361	370	-	298	370	-
Stage 1	-	-	-	-	-	-	774	715	-	602	563	-
Stage 2	-	-	-	-	-	-	574	563	-	639	715	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	10.2	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	789	1197	-	-	1339	-	-	410
HCM Lane V/C Ratio	0.127	-	-	-	0.026	-	-	0.029
HCM Control Delay (s)	10.2	0	-	-	7.8	0	-	14
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	207	1	1	338	2	4
Future Vol, veh/h	207	1	1	338	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	1	1	367	2	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	226	0	596	226
Stage 1	-	-	-	-	226	-
Stage 2	-	-	-	-	370	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1342	-	466	813
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	699	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1342	-	466	813
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	698	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	651	-	-	1342	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	10.6	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	206	2	1	339	2	2
Future Vol, veh/h	206	2	1	339	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	224	2	1	368	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	226	0	596	225
Stage 1	-	-	-	-	225	-
Stage 2	-	-	-	-	371	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1342	-	466	814
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	698	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1342	-	466	814
Mov Cap-2 Maneuver	-	-	-	-	466	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	697	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	593	-	-	1342	-
HCM Lane V/C Ratio	0.007	-	-	0.001	-
HCM Control Delay (s)	11.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	123	188	31	148	0	0	0	0	13	2	26
Future Vol, veh/h	0	123	188	31	148	0	0	0	0	13	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	134	204	34	161	0	0	0	0	14	2	28

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	338	0	0	464	566	161
Stage 1	-	-	-	-	-	-	228	228	-
Stage 2	-	-	-	-	-	-	236	338	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1221	-	0	556	434	884
Stage 1	0	-	-	-	-	0	810	715	-
Stage 2	0	-	-	-	-	0	803	641	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1221	-	-	539	0	884
Mov Cap-2 Maneuver	-	-	-	-	-	-	539	0	-
Stage 1	-	-	-	-	-	-	785	0	-
Stage 2	-	-	-	-	-	-	803	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1.4	10.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1221	-	729
HCM Lane V/C Ratio	-	-	0.028	-	0.061
HCM Control Delay (s)	-	-	8	0	10.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.2

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	119	0	0	115	18	64	0	29	0	0	0
Future Vol, veh/h	17	119	0	0	115	18	64	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	129	0	0	125	20	70	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	145	0	-	-	-	0	301	311	129
Stage 1	-	-	-	-	-	-	166	166	-
Stage 2	-	-	-	-	-	-	135	145	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1437	-	0	0	-	-	691	604	921
Stage 1	-	-	0	0	-	-	863	761	-
Stage 2	-	-	0	0	-	-	891	777	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1437	-	-	-	-	-	682	0	921
Mov Cap-2 Maneuver	-	-	-	-	-	-	682	0	-
Stage 1	-	-	-	-	-	-	852	0	-
Stage 2	-	-	-	-	-	-	891	0	-

Approach	EB	WB	NB
HCM Control Delay, s	0.9	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	742	1437	-	-	-
HCM Lane V/C Ratio	0.136	0.013	-	-	-
HCM Control Delay (s)	10.6	7.5	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.5	0	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	132	96	35	320	0	0	0	0	19	1	20
Future Vol, veh/h	0	132	96	35	320	0	0	0	0	19	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	143	104	38	348	0	0	0	0	21	1	22

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	248	0	0	620	672	348
Stage 1	-	-	-	-	-	-	424	424	-
Stage 2	-	-	-	-	-	-	196	248	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1318	-	0	452	377	695
Stage 1	0	-	-	-	-	0	660	587	-
Stage 2	0	-	-	-	-	0	837	701	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1318	-	-	436	0	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	0	-
Stage 1	-	-	-	-	-	-	636	0	-
Stage 2	-	-	-	-	-	-	837	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.8	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1318	-	539
HCM Lane V/C Ratio	-	-	0.029	-	0.081
HCM Control Delay (s)	-	-	7.8	0	12.3
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	127	0	0	119	19	236	0	59	0	0	0
Future Vol, veh/h	24	127	0	0	119	19	236	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	138	0	0	129	21	257	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	150	0	-	-	-	0	330	340	138
Stage 1	-	-	-	-	-	-	190	190	-
Stage 2	-	-	-	-	-	-	140	150	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1431	-	0	0	-	-	665	582	910
Stage 1	-	-	0	0	-	-	842	743	-
Stage 2	-	-	0	0	-	-	887	773	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1431	-	-	-	-	-	652	0	910
Mov Cap-2 Maneuver	-	-	-	-	-	-	652	0	-
Stage 1	-	-	-	-	-	-	825	0	-
Stage 2	-	-	-	-	-	-	887	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	691	1431	-	-	-
HCM Lane V/C Ratio	0.464	0.018	-	-	-
HCM Control Delay (s)	14.6	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	2.5	0.1	-	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	130	207	31	228	0	0	0	0	13	2	34
Future Vol, veh/h	0	130	207	31	228	0	0	0	0	13	2	34
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	141	225	34	248	0	0	0	0	14	2	37

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	366	0	0	569	681	248
Stage 1	-	-	-	-	-	-	315	315	-
Stage 2	-	-	-	-	-	-	254	366	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1193	-	0	484	373	791
Stage 1	0	-	-	-	-	0	740	656	-
Stage 2	0	-	-	-	-	0	788	623	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1193	-	-	468	0	791
Mov Cap-2 Maneuver	-	-	-	-	-	-	468	0	-
Stage 1	-	-	-	-	-	-	716	0	-
Stage 2	-	-	-	-	-	-	788	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	1	10.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1193	-	664
HCM Lane V/C Ratio	-	-	0.028	-	0.08
HCM Control Delay (s)	-	-	8.1	0	10.9
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	18	125	0	0	147	18	112	0	29	0	0	0
Future Vol, veh/h	18	125	0	0	147	18	112	0	29	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	20	136	0	0	160	20	122	0	32	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	179	0	-	-	-	0	345	354	136
Stage 1	-	-	-	-	-	-	175	175	-
Stage 2	-	-	-	-	-	-	170	179	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1397	-	0	0	-	-	652	571	913
Stage 1	-	-	0	0	-	-	855	754	-
Stage 2	-	-	0	0	-	-	860	751	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1397	-	-	-	-	-	642	0	913
Mov Cap-2 Maneuver	-	-	-	-	-	-	642	0	-
Stage 1	-	-	-	-	-	-	842	0	-
Stage 2	-	-	-	-	-	-	860	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	684	1397	-	-	-
HCM Lane V/C Ratio	0.224	0.014	-	-	-
HCM Control Delay (s)	11.8	7.6	0	-	-
HCM Lane LOS	B	A	A	-	-
HCM 95th %tile Q(veh)	0.9	0	-	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	311	0	59	203	0	0	1	21	5	1	5
Future Vol, veh/h	0	311	0	59	203	0	0	1	21	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	338	0	64	221	0	0	1	23	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	221	0	0	338	0	0	690	687	338	699	687	221
Stage 1	-	-	-	-	-	-	338	338	-	349	349	-
Stage 2	-	-	-	-	-	-	352	349	-	350	338	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1348	-	-	1221	-	-	359	370	704	354	370	819
Stage 1	-	-	-	-	-	-	676	641	-	667	633	-
Stage 2	-	-	-	-	-	-	665	633	-	666	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1348	-	-	1221	-	-	339	348	704	326	348	819
Mov Cap-2 Maneuver	-	-	-	-	-	-	339	348	-	326	348	-
Stage 1	-	-	-	-	-	-	676	641	-	667	595	-
Stage 2	-	-	-	-	-	-	620	595	-	643	641	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.8	10.5	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	673	1348	-	-	1221	-	-	452
HCM Lane V/C Ratio	0.036	-	-	-	0.053	-	-	0.026
HCM Control Delay (s)	10.5	0	-	-	8.1	0	-	13.2
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	310	3	3	205	1	1
Future Vol, veh/h	310	3	3	205	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	337	3	3	223	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	340	0	568	339
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1219	-	484	703
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	809	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1219	-	483	703
Mov Cap-2 Maneuver	-	-	-	-	483	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	573	-	-	1219	-
HCM Lane V/C Ratio	0.004	-	-	0.003	-
HCM Control Delay (s)	11.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	309	6	26	180	1	4
Future Vol, veh/h	309	6	26	180	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	336	7	28	196	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	342	0	591	339
Stage 1	-	-	-	-	339	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1217	-	470	703
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	458	703
Mov Cap-2 Maneuver	-	-	-	-	458	-
Stage 1	-	-	-	-	722	-
Stage 2	-	-	-	-	769	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	10.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	635	-	-	1217	-
HCM Lane V/C Ratio	0.009	-	-	0.023	-
HCM Control Delay (s)	10.7	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	173	151	35	352	0	0	0	0	19	1	22
Future Vol, veh/h	0	173	151	35	352	0	0	0	0	19	1	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	188	164	38	383	0	0	0	0	21	1	24

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	352	0	0	729	811	383
Stage 1	-	-	-	-	-	-	459	459	-
Stage 2	-	-	-	-	-	-	270	352	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1207	-	0	390	313	664
Stage 1	0	-	-	-	-	0	636	566	-
Stage 2	0	-	-	-	-	0	775	632	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1207	-	-	374	0	664
Mov Cap-2 Maneuver	-	-	-	-	-	-	374	0	-
Stage 1	-	-	-	-	-	-	611	0	-
Stage 2	-	-	-	-	-	-	775	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.7	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1207	-	488
HCM Lane V/C Ratio	-	-	0.032	-	0.094
HCM Control Delay (s)	-	-	8.1	0	13.1
HCM Lane LOS	-	-	A	A	B
HCM 95th %tile Q(veh)	-	-	0.1	-	0.3

Intersection	
Int Delay, s/veh	8.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	161	0	0	127	19	260	0	59	0	0	0
Future Vol, veh/h	31	161	0	0	127	19	260	0	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	175	0	0	138	21	283	0	64	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	159	0	-	-	-	0	390	401	175
Stage 1	-	-	-	-	-	-	242	242	-
Stage 2	-	-	-	-	-	-	148	159	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1420	-	0	0	-	-	614	538	868
Stage 1	-	-	0	0	-	-	798	705	-
Stage 2	-	-	0	0	-	-	880	766	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1420	-	-	-	-	-	597	0	868
Mov Cap-2 Maneuver	-	-	-	-	-	-	597	0	-
Stage 1	-	-	-	-	-	-	776	0	-
Stage 2	-	-	-	-	-	-	880	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	634	1420	-	-	-
HCM Lane V/C Ratio	0.547	0.024	-	-	-
HCM Control Delay (s)	17.3	7.6	0	-	-
HCM Lane LOS	C	A	A	-	-
HCM 95th %tile Q(veh)	3.3	0.1	-	-	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	229	0	32	342	0	1	1	90	5	1	5
Future Vol, veh/h	0	229	0	32	342	0	1	1	90	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	249	0	35	372	0	1	1	98	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	372	0	0	249	0	0	694	690	249	739	690	372
Stage 1	-	-	-	-	-	-	249	249	-	441	441	-
Stage 2	-	-	-	-	-	-	445	441	-	298	249	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1186	-	-	1317	-	-	357	368	790	333	368	674
Stage 1	-	-	-	-	-	-	755	701	-	595	577	-
Stage 2	-	-	-	-	-	-	592	577	-	711	701	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1186	-	-	1317	-	-	344	356	790	284	356	674
Mov Cap-2 Maneuver	-	-	-	-	-	-	344	356	-	284	356	-
Stage 1	-	-	-	-	-	-	755	701	-	595	558	-
Stage 2	-	-	-	-	-	-	567	558	-	622	701	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.7	10.4	14.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	769	1186	-	-	1317	-	-	395
HCM Lane V/C Ratio	0.13	-	-	-	0.026	-	-	0.03
HCM Control Delay (s)	10.4	0	-	-	7.8	0	-	14.4
HCM Lane LOS	B	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	225	1	1	347	2	4
Future Vol, veh/h	225	1	1	347	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	245	1	1	377	2	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	246	0	624	245
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1320	-	449	794
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	692	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1320	-	449	794
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	691	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	632	-	-	1320	-
HCM Lane V/C Ratio	0.01	-	-	0.001	-
HCM Control Delay (s)	10.8	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	224	2	1	348	2	2
Future Vol, veh/h	224	2	1	348	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	243	2	1	378	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	246	0	625	245
Stage 1	-	-	-	-	245	-
Stage 2	-	-	-	-	380	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1320	-	449	794
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	691	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1320	-	449	794
Mov Cap-2 Maneuver	-	-	-	-	449	-
Stage 1	-	-	-	-	796	-
Stage 2	-	-	-	-	690	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	574	-	-	1320	-
HCM Lane V/C Ratio	0.008	-	-	0.001	-
HCM Control Delay (s)	11.3	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	10.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	197	167	239	651	0	0	0	0	50	2	76
Future Vol, veh/h	0	197	167	239	651	0	0	0	0	50	2	76
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	214	182	260	708	0	0	0	0	54	2	83

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	396	0	0	1532	1623	708
Stage 1	-	-	-	-	-	-	1227	1227	-
Stage 2	-	-	-	-	-	-	305	396	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1163	-	0	128	103	435
Stage 1	0	-	-	-	-	0	277	251	-
Stage 2	0	-	-	-	-	0	748	604	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1163	-	-	81	0	435
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	0	-
Stage 1	-	-	-	-	-	-	175	0	-
Stage 2	-	-	-	-	-	-	748	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.4	98
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1163	-	159
HCM Lane V/C Ratio	-	-	0.223	-	0.875
HCM Control Delay (s)	-	-	9	0	98
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.9	-	6.1

Intersection	
Int Delay, s/veh	29.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	217	0	0	662	80	228	0	55	0	0	0
Future Vol, veh/h	30	217	0	0	662	80	228	0	55	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	236	0	0	720	87	248	0	60	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	807	0	-	-	-	0	1064	1108	236
Stage 1	-	-	-	-	-	-	301	301	-
Stage 2	-	-	-	-	-	-	763	807	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	818	-	0	0	-	-	~ 247	210	803
Stage 1	-	-	0	0	-	-	751	665	-
Stage 2	-	-	0	0	-	-	460	394	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	818	-	-	-	-	-	~ 236	0	803
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 236	0	-
Stage 1	-	-	-	-	-	-	716	0	-
Stage 2	-	-	-	-	-	-	460	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	131.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	274	818	-	-	-
HCM Lane V/C Ratio	1.123	0.04	-	-	-
HCM Control Delay (s)	131.8	9.6	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	13	0.1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	8.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	545	85	141	407	0	0	0	0	81	1	39
Future Vol, veh/h	0	545	85	141	407	0	0	0	0	81	1	39
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	592	92	153	442	0	0	0	0	88	1	42

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	685	0	0	1388	1434	442
Stage 1	-	-	-	-	-	-	749	749	-
Stage 2	-	-	-	-	-	-	639	685	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	908	-	0	157	134	615
Stage 1	0	-	-	-	-	0	467	419	-
Stage 2	0	-	-	-	-	0	526	448	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	908	-	-	122	0	615
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	0	-
Stage 1	-	-	-	-	-	-	363	0	-
Stage 2	-	-	-	-	-	-	526	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	80.7
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	908	-	165
HCM Lane V/C Ratio	-	-	0.169	-	0.797
HCM Control Delay (s)	-	-	9.8	0	80.7
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.6	-	5.2

Intersection	
Int Delay, s/veh	132.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	93	533	0	0	283	71	265	0	178	0	0	0
Future Vol, veh/h	93	533	0	0	283	71	265	0	178	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	101	579	0	0	308	77	288	0	193	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	385	0	-	-	-	0	1128	1167	579
Stage 1	-	-	-	-	-	-	782	782	-
Stage 2	-	-	-	-	-	-	346	385	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1173	-	0	0	-	-	~ 226	194	515
Stage 1	-	-	0	0	-	-	451	405	-
Stage 2	-	-	0	0	-	-	716	611	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1173	-	-	-	-	-	~ 197	0	515
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 197	0	-
Stage 1	-	-	-	-	-	-	394	0	-
Stage 2	-	-	-	-	-	-	716	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	$ 423.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	262	1173	-	-	-
HCM Lane V/C Ratio	1.838	0.086	-	-	-
HCM Control Delay (s)	$ 423.8	8.4	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	32.9	0.3	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	16.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	204	186	239	731	0	0	0	0	50	2	84
Future Vol, veh/h	0	204	186	239	731	0	0	0	0	50	2	84
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	222	202	260	795	0	0	0	0	54	2	91

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	424	0	0	1637	1738	795
Stage 1	-	-	-	-	-	-	1314	1314	-
Stage 2	-	-	-	-	-	-	323	424	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	1135	-	0	111	87	388
Stage 1	0	-	-	-	-	0	251	228	-
Stage 2	0	-	-	-	-	0	734	587	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	1135	-	-	65	0	388
Mov Cap-2 Maneuver	-	-	-	-	-	-	65	0	-
Stage 1	-	-	-	-	-	-	148	0	-
Stage 2	-	-	-	-	-	-	734	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.2	166.5
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	1135	-	136
HCM Lane V/C Ratio	-	-	0.229	-	1.087
HCM Control Delay (s)	-	-	9.1	0	166.5
HCM Lane LOS	-	-	A	A	F
HCM 95th %tile Q(veh)	-	-	0.9	-	8.2

Intersection	
Int Delay, s/veh	62

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	223	0	0	694	80	276	0	55	0	0	0
Future Vol, veh/h	31	223	0	0	694	80	276	0	55	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	242	0	0	754	87	300	0	60	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	841	0	-	-	-	0	1108	1151	242
Stage 1	-	-	-	-	-	-	310	310	-
Stage 2	-	-	-	-	-	-	798	841	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	794	-	0	0	-	-	~ 232	198	797
Stage 1	-	-	0	0	-	-	744	659	-
Stage 2	-	-	0	0	-	-	443	380	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	794	-	-	-	-	-	~ 221	0	797
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 221	0	-
Stage 1	-	-	-	-	-	-	708	0	-
Stage 2	-	-	-	-	-	-	443	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.2	0	253.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	251	794	-	-	-
HCM Lane V/C Ratio	1.433	0.042	-	-	-
HCM Control Delay (s)	253.8	9.7	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	20.3	0.1	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	364	0	59	756	0	0	1	21	5	1	5
Future Vol, veh/h	0	364	0	59	756	0	0	1	21	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	396	0	64	822	0	0	1	23	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	822	0	0	396	0	0	1349	1346	396	1358	1346	822
Stage 1	-	-	-	-	-	-	396	396	-	950	950	-
Stage 2	-	-	-	-	-	-	953	950	-	408	396	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	807	-	-	1163	-	-	128	151	653	126	151	374
Stage 1	-	-	-	-	-	-	629	604	-	312	339	-
Stage 2	-	-	-	-	-	-	311	339	-	620	604	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	807	-	-	1163	-	-	116	136	653	112	136	374
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	136	-	112	136	-
Stage 1	-	-	-	-	-	-	629	604	-	312	305	-
Stage 2	-	-	-	-	-	-	275	305	-	597	604	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	11.8	28.1
HCM LOS			B	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	557	807	-	-	1163	-	-	168
HCM Lane V/C Ratio	0.043	-	-	-	0.055	-	-	0.071
HCM Control Delay (s)	11.8	0	-	-	8.3	0	-	28.1
HCM Lane LOS	B	A	-	-	A	A	-	D
HCM 95th %tile Q(veh)	0.1	0	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	363	3	3	758	1	1
Future Vol, veh/h	363	3	3	758	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	395	3	3	824	1	1

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	398	0	1226	396
Stage 1	-	-	-	-	396	-
Stage 2	-	-	-	-	830	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1161	-	197	653
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	428	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1161	-	196	653
Mov Cap-2 Maneuver	-	-	-	-	196	-
Stage 1	-	-	-	-	680	-
Stage 2	-	-	-	-	426	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	302	-	-	1161	-
HCM Lane V/C Ratio	0.007	-	-	0.003	-
HCM Control Delay (s)	17	-	-	8.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	362	6	26	733	1	4
Future Vol, veh/h	362	6	26	733	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	393	7	28	797	1	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	400	0	1250	397
Stage 1	-	-	-	-	397	-
Stage 2	-	-	-	-	853	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1159	-	191	652
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	418	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1159	-	183	652
Mov Cap-2 Maneuver	-	-	-	-	183	-
Stage 1	-	-	-	-	679	-
Stage 2	-	-	-	-	400	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	431	-	-	1159	-
HCM Lane V/C Ratio	0.013	-	-	0.024	-
HCM Control Delay (s)	13.5	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	11.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	586	140	141	439	0	0	0	0	81	1	41
Future Vol, veh/h	0	586	140	141	439	0	0	0	0	81	1	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	637	152	153	477	0	0	0	0	88	1	45

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	789	0	0	1497	1573	477
Stage 1	-	-	-	-	-	-	784	784	-
Stage 2	-	-	-	-	-	-	713	789	-
Critical Hdwy	-	-	-	4.12	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	-	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	0	-	-	831	-	0	135	110	588
Stage 1	0	-	-	-	-	0	450	404	-
Stage 2	0	-	-	-	-	0	486	402	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	831	-	-	101	0	588
Mov Cap-2 Maneuver	-	-	-	-	-	-	101	0	-
Stage 1	-	-	-	-	-	-	337	0	-
Stage 2	-	-	-	-	-	-	486	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	2.5	126.2
HCM LOS			F

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1
Capacity (veh/h)	-	-	831	-	140
HCM Lane V/C Ratio	-	-	0.184	-	0.955
HCM Control Delay (s)	-	-	10.3	0	126.2
HCM Lane LOS	-	-	B	A	F
HCM 95th %tile Q(veh)	-	-	0.7	-	6.7

Intersection	
Int Delay, s/veh	178.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	100	567	0	0	291	71	289	0	178	0	0	0
Future Vol, veh/h	100	567	0	0	291	71	289	0	178	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	109	616	0	0	316	77	314	0	193	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	393	0	-	-	-	0	1189	1227	616
Stage 1	-	-	-	-	-	-	834	834	-
Stage 2	-	-	-	-	-	-	355	393	-
Critical Hdwy	4.12	-	-	-	-	-	6.42	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.52	-
Follow-up Hdwy	2.218	-	-	-	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1166	-	0	0	-	-	~ 208	178	491
Stage 1	-	-	0	0	-	-	426	383	-
Stage 2	-	-	0	0	-	-	710	606	-
Platoon blocked, %		-			-	-			
Mov Cap-1 Maneuver	1166	-	-	-	-	-	~ 178	0	491
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 178	0	-
Stage 1	-	-	-	-	-	-	366	0	-
Stage 2	-	-	-	-	-	-	710	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.3	0	$ 569.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR
Capacity (veh/h)	235	1166	-	-	-
HCM Lane V/C Ratio	2.16	0.093	-	-	-
HCM Control Delay (s)	$ 569.5	8.4	0	-	-
HCM Lane LOS	F	A	A	-	-
HCM 95th %tile Q(veh)	39	0.3	-	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	631	0	32	448	0	1	1	90	5	1	5
Future Vol, veh/h	0	631	0	32	448	0	1	1	90	5	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	686	0	35	487	0	1	1	98	5	1	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	487	0	0	686	0	0	1246	1243	686	1292	1243	487
Stage 1	-	-	-	-	-	-	686	686	-	557	557	-
Stage 2	-	-	-	-	-	-	560	557	-	735	686	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1076	-	-	908	-	-	151	174	447	140	174	581
Stage 1	-	-	-	-	-	-	438	448	-	515	512	-
Stage 2	-	-	-	-	-	-	513	512	-	411	448	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1076	-	-	908	-	-	143	165	447	104	165	581
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	165	-	104	165	-
Stage 1	-	-	-	-	-	-	438	448	-	515	485	-
Stage 2	-	-	-	-	-	-	480	485	-	320	448	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.6	15.9	27.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	429	1076	-	-	908	-	-	175
HCM Lane V/C Ratio	0.233	-	-	-	0.038	-	-	0.068
HCM Control Delay (s)	15.9	0	-	-	9.1	0	-	27.1
HCM Lane LOS	C	A	-	-	A	A	-	D
HCM 95th %tile Q(veh)	0.9	0	-	-	0.1	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	627	3	1	453	2	4
Future Vol, veh/h	627	3	1	453	2	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	682	3	1	492	2	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	685	0	1178	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	495	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	908	-	211	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	613	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	908	-	211	449
Mov Cap-2 Maneuver	-	-	-	-	211	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	612	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	16.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	326	-	-	908	-
HCM Lane V/C Ratio	0.02	-	-	0.001	-
HCM Control Delay (s)	16.3	-	-	9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	628	2	1	454	2	2
Future Vol, veh/h	628	2	1	454	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	683	2	1	493	2	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	685	0	1180	684
Stage 1	-	-	-	-	684	-
Stage 2	-	-	-	-	496	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	908	-	210	449
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	612	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	908	-	210	449
Mov Cap-2 Maneuver	-	-	-	-	210	-
Stage 1	-	-	-	-	501	-
Stage 2	-	-	-	-	611	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	286	-	-	908	-
HCM Lane V/C Ratio	0.015	-	-	0.001	-
HCM Control Delay (s)	17.8	-	-	9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

DELAY (CONTROL)

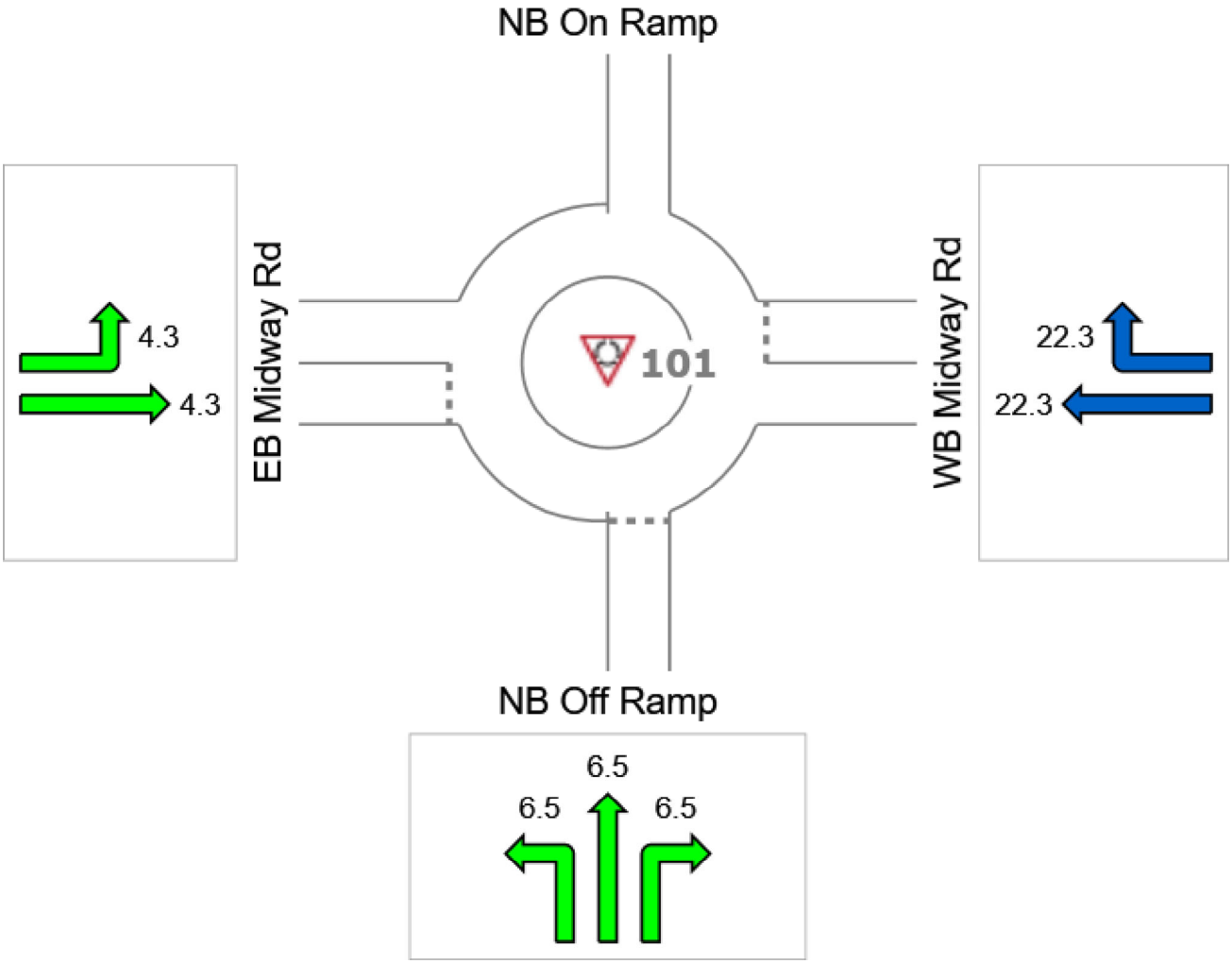
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Midway NB Ramps AM]

New Site
Roundabout

All Movement Classes

	South	East	West	Intersection
Delay (Control)	6.5	22.3	4.3	15.1
LOS	A	C	A	B



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Roundabout Level of Service Method: Same as Signalised Intersections
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.

DELAY (CONTROL)

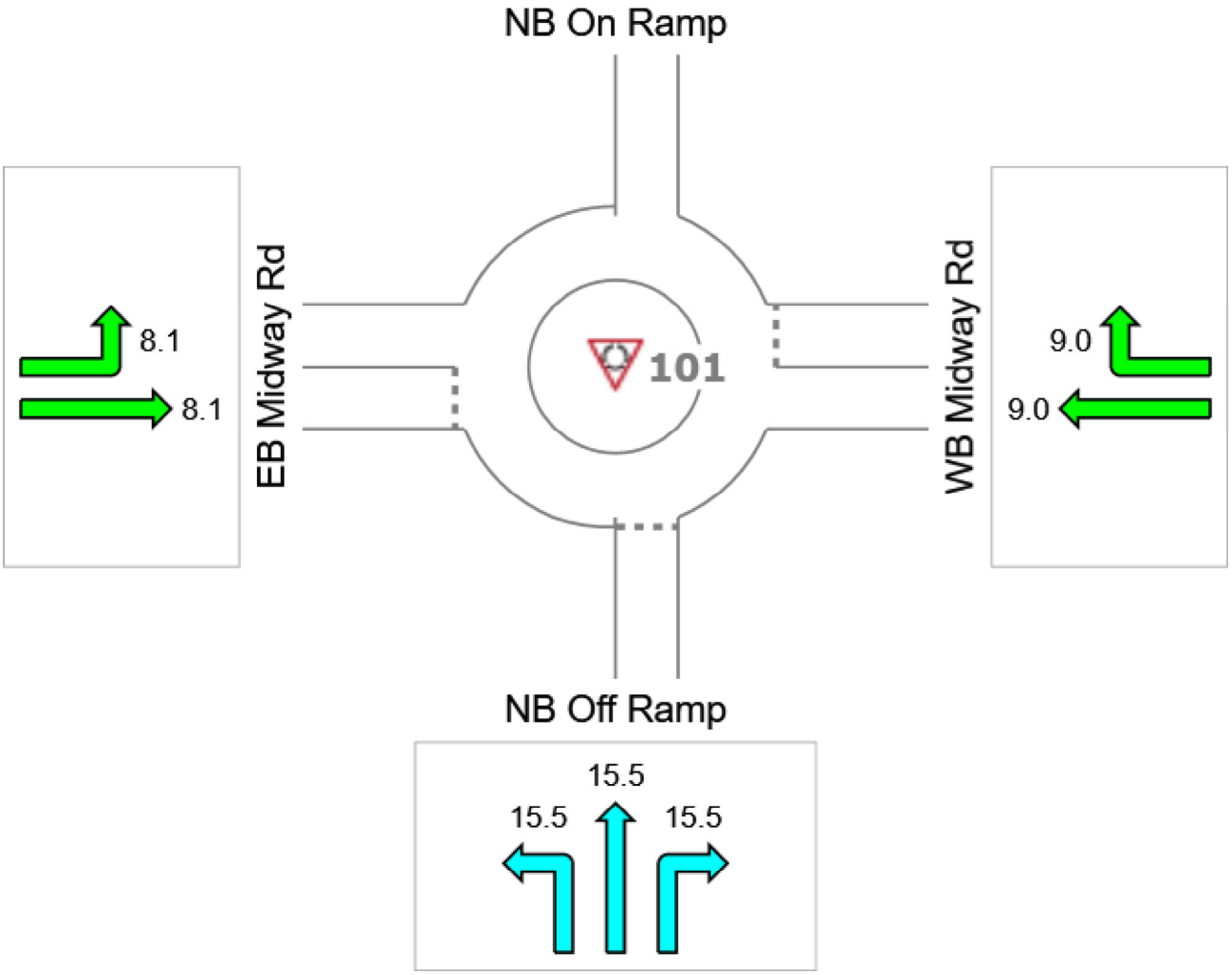
Average control delay per vehicle, or average pedestrian delay (seconds)

Site: 101 [Midway NB Ramps PM]

New Site
Roundabout

All Movement Classes

	South	East	West	Intersection
Delay (Control)	15.5	9.0	8.1	10.6
LOS	B	A	A	B



Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
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